

# FORTUNES OF THE BUS INDUSTRY

See Pages 2 and 3



"THE TIMES" OF THE TRANSPORT WORLD

# MECHANICAL HANDLING EQUIPMENT DISPLAYED

See Page 9

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## Saving the Railways

ALTHOUGH limited increases of passenger fares on certain services are not ruled out by Sir Brian Robertson in his discussions on the future of the railways with the Minister of Transport, it would take some months to obtain authority, and it is certain that no offer to improve wages and salaries would be possible in 1958 unless the British Transport Commission makes substantial reductions in working expenses. Traffic in the past six months has been below expectations due to the slowing down of economic activity. So the task is a double one: to restore the level of current net receipts and then to make possible a review of salaries and wages later in the year. Proposals include a drastic reduction in train mileage, including certain express services, with overall cuts next winter. Freight services will be adjusted to accord with traffic levels without reducing the standard of service offered. Reductions of wagon repairs will be facilitated by scrapping 100,000 wagons this year. Maintenance expenditure will be reduced where it can be done without affecting safety and good service. Consideration is being given to withdrawal of services on 30 lines involving a total net annual saving of £500,000 and a comprehensive review of all services will be pressed forward with a view to the speediest possible elimination of those whose retention is unjustifiable. Unremunerative cross-channel services will be discontinued, including Newhaven-Dieppe in the winter. The numbers employed on British Railways have been reduced by 6,000 since March, 1957. Further substantial economies in manpower will be made during the coming year and where they cannot be covered by normal wastage the agreed redundancy arrangements will be used. The regional general managers gave an assurance of their determination to act on these lines at a meeting on May 1.

## Improving Net Revenue

IN his reply the Minister of Transport, Mr. Harold Watkinson, recalled that in connection with the Government's action in September, 1957, to restrain inflation and to control the level of public investment, the Commission's investment programmes for 1958 and 1959 were limited to £170 million and £175 million respectively. "Since then the railway regions have been able to show that they can accelerate the pace of modernisation particularly in 1960 and 1961. As a result the phasing of the modernisation plan for the railways has been under study of the Commission, my Ministry and the Treasury for some time." Following the Prime Minister's meeting it has been shown that selective increases in capital investment now could make an improvement in the Commission's net revenue which would begin to accrue in the next 12 months. First, use of £7 million would avoid any slowing down in the programme for new works and plant in 1958 and 1959. This would reduce costs and accelerate financial returns on the schemes involved; secondly, £6 million would be allocated for diesel locomotives and multiple-unit trains. Apart from the immediate financial benefits of introducing diesel traction, an important reason for accelerating the diesel programme is that the Commission, having successfully negotiated with the unions the manning agreement for diesel locomotives, naturally wish to reap the benefits that flow from this agreement as soon as possible; finally, £12 million would be allocated to projects giving the most rapid financial return, including the contraction of marshalling yards and the modernisation of goods depots, the provision of facilities for diesels and to the improvement of signalling systems such as automatic train control.

## Bridges and Crossings

ON the understanding that the unions will play their full part, the Government is prepared to authorise additional investment (within the total public sector programme envisaged last September) of £25 million over the two years 1958 and 1959 in order that the Commission may accelerate the more remunerative items in its

modernisation programme to which I have referred above, writes Mr. Watkinson. In addition the Government, in carrying out its current review of long-term investment in the public sector, will be prepared to consider how far it may be practicable to provide for more rapid completion of the modernisation programme in 1960 and subsequent years. The Commission also put forward proposals for relieving the railways of certain inherited obligations in relation to bridges carrying roads over railways and level crossings which it had already referred to in its proposals for the railways included in the White Paper issued in October, 1956. The Government recognises that the Commission has for some

Robertson, we understand, is prepared to talk over the economic situation with the unions in July and to agree some improvement of wages in the autumn.

## British Railwaymen Overseas

NOW Commissioner for East Africa, Sir Arthur Kirby, formerly general manager of East African Railways and Harbours, gave a fascinating account of railway problems in that country to members of the Transportation Club last month. It is characteristic of the British outlook on life that whereas the Tanganyika section was

# CURRENT TOPICS

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time felt that obligations in these respects ought to be adjusted in the light of modern conditions, and has sympathy with the Commission's desire for a review. It is anxious that the Commission's road bridges and level crossings should be modernised as far as possible in step with the road modernisation programme. As regards level crossings, the first task must be to install the new types of automatic level crossing gates which will save manpower and give better traffic flow. These questions will be investigated on their merits.

## Canvassing for Traffic

AS to freight traffic, more could be done to convince industry that if it wishes to have at its service a modern and efficient railway system industry must play its part in seeing that, where the railways offer a competitive service, full use is made of it. "I propose that you and I should meet the leaders of the appropriate organisations to discuss how, as railway modernisation gathers speed, the railways can attract a much greater share of commercial traffic of all kinds, as they must do if they are to justify the very large sums of public money which are being invested in them," wrote Mr. Watkinson. As regards passenger services the Government is prepared to support the Commission's proposals for reducing or withdrawing unremunerative services where the demand for these is disappearing or is likely to be met more economically by other forms of transport, and the Minister proposes to have early discussions with the chairmen of the Transport Users Consultative Committees to see whether any improvements can be achieved in procedure. Two obvious questions arise from this more accommodating attitude on the part of the Government. One is whether it goes far enough to match the energy and enterprise of B.T.C. officers in putting the railways on a sound footing; the other must be whether the men can exercise restraint to wait for a review of wages for a comparatively short period. Sir Brian

built before 1914 by the Germans for frankly imperialistic reasons, the Kenya and Uganda line came into being as a result of our desire to open up the country in order to suppress the slave trade in Central Africa. As in many other territories the railway provided the basic transport to give access to the country and essential services such as water supplies, electric power, workshop facilities, the first schools and basic training to the indigenous inhabitants as members of the artisan class. In this case the first legislative assembly met in the railway club building. "The British railwayman," said Sir Arthur, "has left in the several countries in which he has served a fund of good will and the foundations of technical competence and integrity which I feel sure will stand Britain in good stead for many years to come."

## Liverpool Tramcar Goes West

THE last tramcar to run through the Liverpool streets, No. 293, which first entered service on July 31, 1939, made its final journey in Liverpool on Wednesday, May 7, when it left Edge Lane Works for Gladstone Dock. The following day it was taken on board *American Packer* for shipment to the United States of America. During the last week of tram operation (September 9-14, 1957) it operated in a distinctive cream livery with the inscription "1897—Liverpool's Last Tram—1957." In the U.S.A. it will be joining over 50 cars which have been collected by the New England Electric Railway Historical Society from all over the U.S.A. as well as from Canada and Great Britain. The other British car is a double-deck eight-wheeler from Blackpool. The society is the world's oldest and largest organisation devoted exclusively to the preservation of railway equipment. It opened the Seashore Electric Railway in Kennebunkport, Maine, in 1939. Most of the work of building the track and restoring and maintaining the cars has been done by members of the society in their spare time.

## Welsh Progress in the Mountains

AT a time when railway operating efficiency is bedevilled by so many difficulties, and mileage is being curtailed, it is a pleasure to turn for a moment to the wizardries of Portmadoc, where in the past year the Festiniog Railway has actually doubled its route mileage and increased its receipts by 42 per cent. This summer the regular service will be extended to Tan-y-Bwlch, a distance of 7½ miles from Portmadoc, and the following year it will reach Dduallt, which is almost three-quarters of the way to Blaenau Ffestiniog. These encouraging facts were revealed at the annual general meeting of the Festiniog Railway Society held at Portmadoc on April 26. Speaking on behalf of the Festiniog Railway Company, Mr. A. F. Pegler reiterated the company's intention of getting through to Blaenau in spite of all obstacles. He declared: "When we were at the bottom people did not take us very seriously, but now that we have climbed the mountain, and are knocking on the door, it is a different story." Indeed, earlier the same day *Talesin*, the double Fairlie locomotive, climbed the mountain with a vengeance by taking a train of seven bogie vehicles carrying 270 people up to Tan-y-Bwlch at an average speed of 12 m.p.h., a truly remarkable performance on the 1 ft. 11½ in. gauge, and a great tribute to all who have helped with the work of reconstruction.

## Progress in Aberdeen

A MOST attractive booklet, *Sixty Years of Progress*, has been issued by Aberdeen Corporation Transport Department to mark the diamond jubilee of the take-over from the Aberdeen District Tramways on August 25, 1898, and also the passing of the tramway system which was for long the mainstay of the undertaking. Its conversion to bus operation was effected last weekend and an account of the changeover arrangements appeared in our May 3 issue. The present 24-page publication owes much to the enterprise of the municipal publicity department and contains some most attractive illustrations of the development both of tram and bus rolling stock. In the year ended May 31, 1899, trams earned £21,689; the revenue of the combined undertaking in 1957 was £1,140,393. Passengers numbered 4,110,662 and 100,885,626 respectively.

## The Late Mr. W. P. Allen

THE loss to the railway community of Mr. W. P. Allen, within so short a time of his projected retirement, will be felt acutely by many. Unassuming, he was a most likeable man whose success in negotiation was due to his breadth of understanding. Many will echo the tribute by Sir John Benstead, deputy-chairman of the British Transport Commission. "The passing of Bill Allen will be mourned by all who knew him, especially the railwaymen to whose well-being he devoted the whole of his working life. I was privileged to know him perhaps as intimately as almost anyone outside his family. In the 1930s, when we were members of our respective trade union executives, and later as officers, we cemented a friendship which during the critical years of the war helped to unify the railwaymen of all grades into a common purpose and understanding. His sagacity as a member of the General Council of the T.U.C. was invaluable in the immediate postwar years, particularly in relation to social insurance. He faced the sternest test of his career on his appointment as a member of the Railway Executive in 1947, when he carried responsibility for manpower, which he later bore as manpower adviser of the Commission up to his death. He faced with unswerving loyalty and courage the difficulties of the past 20 years, and his unflinching cheerfulness, courtesy and honesty commanded the respect of everyone at all levels. I can only say 'he was a man and a brother,' and we hope that the grief of those dear to him will be assuaged by the knowledge of the affection and esteem he so justly earned," concluded Sir John.



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*The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.*

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

### On a Declining Curve

FOR over forty years the bus business in Britain, once it had surmounted the difficulties of its wayward early rolling stock, was expansionist in character, demanding more men and resources to cope with growing popularity. It yet remained keenly efficient, for its sagacious founders had parcelled out the country in areas which supplied each of the large operators with a few fat routes wherewith to sustain the many lean ones—a remarkable instance of private enterprise bending its energies to the provision of almost universal public facilities in an economical manner that might serve as a model for publicly-owned concerns. This well-known arrangement by the area agreement companies makes the more remarkable a local newspaper report in which a well-known transport authority appeared to be advocating that very thing as a means of solving the rural bus problem. In fact, recent circumstances have conspired to make the operation of any services which lose money exceedingly onerous, since undertakings find it increasingly difficult to maintain a reasonable overall operating ratio. The traffic levels of the prewar decade were far transcended in the quinquennium after VJ-day. Petrol rationing, food rationing and growing industrial prosperity joined to maximise use of the buses. But it is evident that the peak has long since passed and that the declining curve entered upon five years or so ago is, if anything, steepening and shows little sign of flattening out.

#### Adverse Factors

MANY factors have brought this about; the increase of private personal transport from mopeds to cars is only one of several. The mobile shop and the modern errand boy in a motor delivery van have reduced off-peak travel by housewives. Television has become a vigorous threat to family travel in the evenings. On the other hand peak hour traffic, costly to work, is made more so by social trends which have led to the steepening of the peak. The legitimate aspirations of the railways to modernise local operation by means of diesel railcars have struck a body blow at some of the best paying routes of bus undertakings, reducing the margin out of which the losers can be sustained. Much has been done to mitigate the ill effects by co-operation between vehicle builders and operators and by introduction, where suitable, of such expedients as one-man buses which are discussed in an article elsewhere in this issue. Operators have stemmed the traffic decline by offering comfort and convenience, but it is plain that in the present framework of regulation and taxation the only course appears to be pruning of the most costly of the unremunerative routes and perhaps little used timings on other services. This is a most distasteful task to the traditional busman, whose watchword has been public service; it is a desperate expedient insofar as any reduction of service must drive more passengers to their own means of private transport. That usually means, especially in the rural areas where the problem is most acute, not only that the owner of the car is lost as a passenger, but those of his family and

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friends to whom he gives lifts. All public transport—the railways as well as the buses—is extremely vulnerable to this process and diehard talk of motorists getting sick of using congested roads is belied by the propensities of the younger generation for obtaining and using their own transport.

#### Harming the Industry

OPERATORS will no doubt discuss many aspects of the foregoing at the Public Transport Association conference in Harrogate next week, when papers will be read by Messrs. J. E. Hollands and G. A. Cherry, the first dealing with economies in maintenance and garaging and the second with the general situation, including labour relations. The obvious harm done the company bus industry by the ill-considered withdrawal of labour last summer is emphasised by the strike of London busmen from May 5. At some inconvenience the Metropolis has shown itself able to do without buses and no doubt some proportion of the traffic diverted elsewhere will never come back. The other side of the picture is the clear demonstration of the good done by the buses in normal times in avoiding the stupendous traffic jams that result from selfish use of personal transport. Conflicting motives actuate the London busmen. The Central men are striking for a bigger differential, it seems; the Country department men for the removal of the differential, since many of them believe life in the outer suburbs and the Home Counties to be more costly than in working-class inner districts; confusion has been added by the T.G.W.U. proposal to have the global sum awarded distributed over all the staff. Many London men, as in provincial undertakings, have been hit by declining traffic, which have reduced overtime and penalty payments so that earnings approximate to the basic rate, while the family overheads go on at a level appropriate to greater prosperity. But discouragement of traffic either by a strike or by higher wage rates that would necessitate higher fares is an illogical and illusory approach to a solution. The Government's strenuous efforts to peg down or reduce the cost of living have on the contrary the backing of common sense.

#### The London Situation

AS a last-minute effort to avert the London strike, which few of the men seemed really to want, the chairman of London Transport sent a personal note to each of the employees concerned pointing to its possible consequences. "I am convinced," he said, "that with a substantial wage increase awarded to the majority of London busmen, it is the height of folly to go on strike at the time when the public are, in any case, using our services less and less. Indeed, I can think of nothing that could deal a worse blow at your real interests than this." Mr. Frank Cousins knows as well as those who run it that the bus industry is declining; but how many of the rank and file in his union realise that stark fact? It has been left to Sir John Elliot to warn them that the result of this foolhardy strike must be augmented traffic losses—more people will have found other ways of getting to work—and there must be "less work for fewer busmen and less money with which to pay wages." Already the London buses are carrying two million fewer passengers daily than in 1950. It is probably true to say that no industrial undertaking in the country studies the welfare of its employees more than does London Transport—a tradition handed down from the spacious days of Lord Ashfield. A strike against such an employer and in such circumstances is, to say the least, ill-advised. In fact, strikes, like wars, are an anachronism but, being domestic, should more easily be averted. The sooner this obvious truism is recognised by those who choose to flout the awards of the arbitrator the better for the public to whose convenience they show so little consideration. If we are to avoid anarchy, reason must prevail.

#### Forthcoming Events

- May 10.—Permanent Way Institution (Leeds and Bradford). Visit to Forth Bridge and a modern marshalling yard near Edinburgh.
- May 10-12.—Railway Students Association. Annual convention. In Switzerland.
- May 11.—Omnibus Society. Tour of system of B. S. Williams, Limited. Meet Emsworth Station. 2 p.m.
- May 11.—Omnibus Society (North Western and Yorkshire). Visit to East Midland Motor Services, Limited, Chesterfield. At Pond Street Bus Station, Sheffield. 1.30 p.m.
- May 12.—Institute of Transport (East Anglia). Annual general meeting and film display. At offices of the Eastern Counties Omnibus Co., Limited, Norwich. 6 p.m.
- May 13.—Institute of Transport (Portsmouth). Annual general meeting. At Chamber of Commerce, Portsmouth. 7 p.m.
- May 13-15.—Public Transport Association. Annual conference. At Harrogate.
- May 14.—Light Railway Transport League. Historic London lantern slides by Mr. A. W. Morant. At 153 Drummond Street, N.W.1. 7 p.m.
- May 14.—Institute of Road Transport Engineers (Metropolitan). Visit to Birmingham and Midland Motor Omnibus Co., Limited, Birmingham. 10.
- May 15.—Institute of Transport (East Midlands). Annual general meeting. At Mechanics Institution, Nottingham. 6.30 p.m.
- May 15.—Institute of Transport (South Western). Annual general meeting. At Great Western Hotel, Exeter. 12.45 p.m.
- May 16.—Institute of Navigation. Paper by Mr. E. W. Anderson, "The Principles of Inertia Navigation Systems." At Royal Geographical Society, 1 Kensington Gore, S.W.7. 5.15 p.m.
- May 17.—Permanent Way Institution (Manchester and Liverpool). Visit to Cannell Laird and Co., Limited, Birkenhead. Meet Green Lane Station. 9.45 a.m.
- June 3-6.—Institute of Transport. Congress. In Dublin.
- September 1-7.—Society of British Aircraft Constructors. Flying display and exhibition. At Farnborough. (Public days September 5, 6 and 7.)



## THE MARCH OF THE ONE-MAN BUS

### The Search for Operating Economies

WITH the continued decline of bus travel outside the peak hours, the problem of maintaining adequate public service without running the danger of impossibly severe financial losses confronts operators both large and small. In the latter part of the twenties and early thirties the availability of small, light chassis, often based on the 30-cwt. or 2-ton commercial product of the manufacturer concerned, led to the extensive use of one-man operated 14- or 20-seat vehicles, either to repel competitors or to serve newly built housing areas, and, of course, the Road Traffic Act, 1930, laid down 20 as normally the maximum number of passengers for a one-man vehicle.

The development of traffic led gradually to a swing away from the small bus, except where special circumstances required its retention and the type tended to appear, certainly in the large fleets, only as a very small proportion of the total. Since 1950, when the postwar traffic increase really ceased and the decline towards the 1939 level began, operators have sought desperately to find more economical types of vehicle for use on sparse traffic routes which possess at the same time sufficient flexibility to be useful also in peak hours. The advent of lighter vehicles with high passenger capacity and economical engines naturally led thoughts towards the possibilities of using larger single-deck vehicles, carrying only a

as 34 from Hastings to Bexhill via Battle have a very low density of winter traffic, but the summer demand is such that plans provide for the restoration of double-deckers to that road during the holiday months. In recent years the company has made vigorous efforts to stimulate traffic by the provision of new through routes and while that faith has been more or less justified in some cases, in others the traffic is still disappointing. It has then become necessary to decide whether to retain the existing arrangements for a further period in an endeavour to attract more passengers or whether to take the plunge and divide the routes once more, so that the poor sections can be served by one-man vehicles.

It is easy to appreciate that, in present conditions, the tendency is to follow the latter course and MODERN TRANSPORT has recently recorded applications to the traffic commissioners for service modifications in the East Grinstead and Tunbridge Wells areas which are a result of this policy. The long route 97 from Ashford to East Grinstead via Tenterden and Tunbridge Wells would be divided into three sections: Ashford—Tenterden; Tenterden—Tunbridge Wells; and Tunbridge Wells—East Grinstead. The first would be served by one-man buses, the second would continue to be operated by double-deckers and the third would be abandoned as a direct operation—Tunbridge Wells has another service (91) to East Grinstead via Forest Row. The Tunbridge Wells—Holtye Common—East Grinstead road would be covered by two routes, both of which have already been changed over. The Tunbridge Wells—Holtye section would have the restored southern half of the erstwhile Tunbridge Wells—Edenbridge circular route (93), while Holtye



One of the latest batch of one-man buses placed in service by Maidstone and District is here seen at Stone Street. An A.E.C. Reliance, it has a 42-seat Harrington body

driver. This, of course, has long been customary in North America in particular, but there the almost universal practice of flat fares, or the division of a city into at most a few zones, makes the task of the driver easier than our normal stage system. In addition, part of the economy of the American system has for long been offset by the installation of large power units in the vehicles to give the required acceleration to maintain scheduled speeds. This obviously was not a profitable line to follow if the aim of British operators was to economise. In the upshot, those who led the field concentrated on large-capacity units with front entrance bodies specially equipped for one-man operation.

#### Problems of Introduction

Introduction of buses of this type is of course no easy matter. First, it is essential to have the agreement of the traffic commissioners in principle and then there comes the question of route approval where both police and traffic commissioners' agreement is required. That is only on the administration side, for equal importance attaches to the acceptance of the idea by the staff, since its co-operation is essential both as regards the introduction of one-man buses and of the maintenance of efficient services with them. Generalisation can frequently be dangerous and never more so than in the transport industry, which has built itself up on a basis of adaptability to local requirements. Views set out here are accordingly based on the experience kindly related by various operators, but it would be improper to attribute to any particular one all the experiences or the assumptions. We would readily admit, however, that we are particularly indebted to Maidstone and District Motor Services, Limited, and to Mr. Stanley Smith, its traffic manager, for assistance in preparing this article; we have gained a considerable amount of recent experience of travel on one-man vehicles on M. and D. buses.

There are at the present time 64 such vehicles at work on Maidstone and District routes and all but five seat 42 passengers. Of these exceptions four are 25-seat Dennis Falcons of what may be termed the old normal-control type and the other is a 43-seater. The percentage of routes on which they operate is roundly 10, and it is pertinent to observe that quite a substantial proportion was previously served by double-deckers. Two examples with, by coincidence, consecutive route numbers are 24 (Maidstone—Horsmonden) and 25 (Maidstone—Wrotham). The double-decking of 24 had been a postwar development brought about by increased traffic, but 25 was a double-deck route of long standing and was so indeed when prior to the establishment of the London Passenger Transport Board in 1933 it worked through to Farningham. The first of the large one-man buses were put to regular work from Gravesend and Tunbridge Wells garages, but now their scope has been so widened that there are some at all the garages of the company and these will be joined by more as it becomes practicable to make the changeover.

#### Variable Traffic

In some cases the problem can be complicated by seasonal variations in traffic and this is the case particularly in the Hastings and Bexhill area which is the latest one to have been treated. Such routes

to East Grinstead already has service 135 and that would be strengthened.

#### Short-Distance Riders

In any consideration of a change in the mode of operation much has to be weighed including, of course, the nature of the traffic on that particular route. If a large percentage of the riders travels only short distances and this habit prevails over the greater part of the journey it may well be doubtful if the move is worthwhile, since additional journey time will probably be needed and this in turn may require widening of the headway or provision of an extra bus if the existing frequency is to be maintained. Other methods of dealing with the problem and particularly where the heavy short-distance traffic is confined mainly to one part of the route include the use of a conductor on the vehicle or the stationing of conductors at particu-



This five-bank model of the Almex ticket machine is equipped to issue season or period tickets, using slot seen below finger wheels. A standard ticket is seen issued from slot at top

larly heavy loading points. Such action has also the effect of confirming the impression of the drivers that everything possible is being done to assist them in their increased work. Where passengers board in the town and alight with little or no replacement on the way out to the rural destination the scope for the one-man vehicle becomes reasonably obvious and it has been found quite frequently that work is normally so light once the terminus has been left that there is no need to allow additional running time. Where the changeover is made it is unwise to deduce too much from the first few weeks of the new operation and it has been put to us very strongly by a number of operators that it is really essential to have six months' experience before deciding finally whether extra running time or any other modifications are required.

Some reference has already been made to moral support for the drivers and much depends upon instilling in them the outlook appropriate to the job in hand. In some cases an operator recruits most of its drivers from among the conductors and in others there are still drivers who worked one-man

(Continued on page 18)

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## LORRY—BUS—COACH

## Crow Vehicles in Manchester

ON appeal by the British Transport Commission, the Crow Carrying Co., Limited, Barking, has lost the two tankers granted out of an application for six (subsequently reduced to four) on A-licence, to be used from a base in Manchester. The Transport Tribunal finds that the applicant completely failed to show what facilities it had been offering in the Manchester area and with which of its 77 A-licensed Barking-based vehicles. The B.T.C. submitted that the grant should be upset because, inter alia, the respondent had been guilty of irregularity in the employment of an average of 10 Barking vehicles in Manchester. The Tribunal says that as all the relevant facts were not made known at the public inquiry it is impossible to express any opinion on this alleged departure from the declaration on which the applicant had obtained its Metropolitan A-licence.

## Haulage Wages Proposal Published

NOTICE of the proposal of the Minister of Labour to implement the road haulage wage recommendations outlined in our April 19 issue was published this week as RH(63).

## Independents on London Streets

TWO independent operators were at work in London streets on Monday, first day of the London bus strike, by consent of London Transport and authority of the Metropolitan Traffic Commissioner. Chiltern Queens, Limited, of Woodcote, near Reading, ran between Hyde Park Corner and Chiswick (Gunnersbury Corner), charging a minimum of 6d.; the other operator was Wright Brothers, of Harlow New Town.

## Provincial Bus Wage Claims In

CLAIMS for wage increases, based on the cost of living, the deterioration in bus workers' standards since before the war, and differentials within and outside the industry, have now been lodged by both sections of the provincial bus industry. The employers will give their reply on June 6. The differential between provincial and London bus wages has already been narrowed by the award last summer to provincial men.

## Unusual Parcels Van Design

DRIVER requirements will be studied closely in the design of the "perfect parcels van" which Dennis Brothers, Limited (and not as stated last week), is to build for Mr. R. B. Brittain, proprietor of Essex Carriers, Limited, and a member of the R.H.A. express carriers functional group. This vehicle will be exhibited it is hoped, at the Commercial Vehicle Show in September, but a first prototype should be delivered before that to Essex Carriers for road trials. The Perkins P4 diesel engine will be mounted vertically immediately in front of the backset front axle, leaving room for the driver to cross in front of it to the nearside in order to reach a sliding door in the bulkhead. The driver's cab will be of the half-width type, like that of a bus, with doors on both sides.

The nearside of the "cab" will have the roof extended across it and a floor, with one step 14 in. from the ground, but no front or side panel or door. The 16 ft. 7 in. body, also to be constructed by Dennis, will be enclosed by a roller shutter and tailboard.

## Preston—Larne Ferry Sailings

SAILINGS of the drive-on-drive-off vessels of the Transport Ferry Service between Preston and Northern Ireland are increased from seven to



One of a number of ex-London Transport Leyland RTL-class double-deck buses acquired by J. Laurie and Co., Limited, Hamilton, Lanark ("Chieftain"), for local services; right, a 68-seat Dennis Loline of Aldershot and District Traction at Aldershot bus station

eight a week in each direction. The new schedule, which became effective on May 5, is necessary in order to meet the steady increase in traffic during recent months. Mr. John Bustard, general manager of the Transport Ferry Service, anticipates a further expansion of both services before the end of the year.

## Speeding Up Deliveries

TRADERS were not going to get any relief from the new trunk roads in the sense that it would take as long to get from St. Albans to London as it would to cover the 73 miles of new road between St. Albans and Birmingham. The streets of towns were becoming rivers of motor vehicles and official measures taken to deal with these problems were at best no more than palliatives, said Mr. W. A. Winson in Ipswich, speaking on the T.R.T.A. "Speed the Van from the Kerb" campaign. It was against this background that the Ministry of Transport had the right to ask of them, either as an Association or as individual operators, what they were doing in their own way to help ease these problems. It was their duty to see that the time of their commercial vehicles spent at the kerb was as brief as possible. There were a number of things they could try out in their search for ways and means to get the van away from the shops as soon as possible; a "sticker" on invoices to traders reminding them that their co-operation was being

sought; "movable floors" in vehicles; or loading "postmanwise" so that deliveries were taken in sequence. He agreed this latter method might be less economic but it might have to be measured against the need to keep the kerb clear.

Commenting on the decision of the Traffic Advisory Committee, Mr. R. E. G. Brown, London and Home Counties division secretary of the T.R.T.A., says that it vindicated the T.R.T.A. view that it was wrong to single out goods vehicles for restrictive treatment. The committee had asked for the whole picture and not simply a part and the T.R.T.A. certainly had no complaint with that. The inquiry had given the first opportunity ever for the transport side of the question to be fully ventilated.

It was perhaps a little surprising that the Ministry of Transport had made no contribution at all on this transport aspect at the inquiry, but at

terminus it could park its buses free of charge. If there was a forecourt, one would expect it to add to the value of the floor space—he submitted that the assessment was made on the amount of floor space, and that it represented the true value.

## Allison Transfer Fails

AN application by Allison's Transport (Contracts), Limited, Dundee, for 10 vehicles totalling 64 tons on A licence was refused after a three-day hearing by the Scottish area Licensing Authority in Dundee. The application, which was stated to have been made to allow the company to dispense with C-hiring operations and eliminate excessive sub-contracting, was one of the most heavily opposed in recent years at Dundee. There were 14 objectors, including British Railways and British Road Services. Evidence disclosed that the drivers for Allison's own fleet and for vehicles hired by Allison's to other C-hiring customers were obtained from the Balfield Labour Agency, of which the sole directors are Mrs. Allison and Mrs. Taylor, wives of the co-directors of Allison's Transport (Contracts), Limited. Asked if the idea of this agency was conceived by himself and his fellow director (Mr. Taylor), to get over an apparent legal difficulty in C-hiring, Mr. James Allison said "to put it bluntly it was a way round the law." He agreed with his agent, Mr. W. D. Conochie, that the set-up of this particular hiring agency was unique in Scotland, if not in the country.

Mr. Allison said his customers had become alarmed in recent months over C-hiring because of visits by traffic examiners accompanied by policemen. They had been asked all sorts of questions (irrelevant, in his opinion) about their C-hiring operations, and invoices had been taken away without any warrant whatever. The customers had been pressing him to try to get rid of this inquisition to which they alleged they had been put. Cross-examined by Mr. J. M. Cowan, Q.C., for British Railways, B.R.S., and other objectors, Mr. Allison agreed that in the decision of the Transport Tribunal on his previous application in 1955, there were suspicions about the legality of the operation of his C-hiring, and that the Balfield Agency was not a legal company. The authorities had had three years in which to prove it, but had not taken the opportunity of doing so. Three years was a long time for people to be committing offences every day if it was illegal. Mr. Alex Robertson, the licensing authority, pointed out that it was immediately after he had declared an Aberdeen agency illegal that Allison had come along and asked for A-licences.

## Bus Garage Valuation

THE Trent Motor Traction Co., Limited, was unsuccessful in an appeal last week to a Loughborough valuation court for a reduction of the assessment of its garage and premises at the Rushes, Loughborough. The valuation officer's figure of £600 gross value and £497 rateable value was upheld. Appearing for the British Electric Traction Federation, Mr. A. H. Kinsman said the garage was supposed to accommodate 20 vehicles, but owing to the inconvenience of the site it could comfortably accommodate only 14. Taking into account a basic valuation figure of about £30 per berth, he submitted that the assessment should be reduced. But Mr. R. A. Eeles, for the valuation officer, said that the company had a "marvellous advantage" because across the road at the bus

## Bus and Coach Developments

London Transport proposes to merge its country bus routes 3628 and 363 as a Penn-High Wycombe-Totteridge service. Harper Brothers (Heath Hayes), Limited, seeks the excursions and tours from Chesterton and Brownhills licensed to Dunn and Hale, Limited. Wolverhampton Corporation applies for a new service between St. James' Square and Ashmore Park Estate (Ferguson Street) via Willenhall and Stubby Lane. Leeds Corporation applies for a Hunslet (Thwaite Gate)—Beckett's Park (Queenswood Drive) service. It would replace the Swingate-Hunslet tram service and grant would also lead to modification of the Latchmere Crescent bus service. On Sunday, May 4, Birmingham City Transport took over the Walsall Road service to the boundary at "Scott Arms" Great Barr, hitherto worked by Midland "Red". The service number was changed from 119 to 51. The company continues to operate the through service to Walsall, subject to a protective fare outwards as indicated in MODERN TRANSPORT of March 8. The daytime service to Great Barr still starts from New Street but the city terminus of the night service NS.51 has been moved to Steelhouse Lane.

## THE CHANGING SCENE

*Atlantean*

The greatest and most definite advance in double deck bus design for several decades. The Atlantean is a front entrance, rear-engined omnibus powered by Leyland running units.



**METROPOLITAN-CAMMELL-WEYMANN LIMITED**

VICKERS HOUSE, WESTMINSTER, LONDON, S.W.1



## AN S.N.C.F. METRE-GAUGE LINE

### New Rolling Stock for Chamonix Service

RECENTLY French Railways took delivery of the first motor coach unit of four new three-car train sets which are on order for the electrified metre-gauge line running through the Chamonix valley between St. Gervais, the terminus of the standard gauge in Haute Savoie, and Vallorcine on the Swiss Frontier, using 800-volt d.c. collected from a side contact third rail placed

improve the services and the conditions under which they are operated. For instance, the duration of the journey, particularly between St. Gervais and Chamonix, will be greatly reduced, thanks to the power of the motors and modern methods of braking. This line enjoys the distinction of having the heaviest gradients in Europe—1 in 11—to be tackled by simple adhesion traction without re-



One of the new Decauville motor coaches for the St. Gervais—Chamonix—Vallorcine line of the S.N.C.F.

at a considerable distance from the running rail. The motor car weighs 38 metric tons and has a continuous rating of 545 h.p.; its delivery trials have already begun.

#### Replacing 37-Year-Old Cars

The new train sets, each of which is composed of two motor coaches with a trailer coupled between, will replace the present rolling stock which has been in service on this line since it was opened

course to a rack. But the existing trains comprise nearly all motor cars, even for freight operation, and in the descending direction a centre rail is engaged on the steeper banks for braking purposes.

#### Passenger Capacity

Each set can convey 244 passengers (143 seated and 101 standing) during the summer service and 229 passengers (136 seated and 93 standing) during the winter period; automatic couplings enable the



One of the 1900 type motor coaches at Vallorcine; the Swiss trains from Martigny use the other side of the platform

in 1901. At that time it ran between St. Gervais and Chamonix only; in 1907 it was extended from Chamonix to Vallorcine to connect there with the metre-gauge Martigny—Chatelard line in Switzerland which in turn gives connections at Martigny with trains running on the Simplon route of the Swiss Federal Railways. The Martigny—Chatelard line has similar third-rail arrangements, but through services are not operated although Vallorcine Station is suitably laid out for them.

The new train sets will make it possible to

composition of the sets to be varied easily so as to cope with daily or seasonal traffic fluctuations.

Finally, extra care has been given to the interior fittings—comfortable seats, pleasant decor, wide opening windows—in order to provide passengers using this essentially tourist line with every comfort at all seasons. During the winter detachable ski holders will be provided on the entrance platforms and in the luggage compartment. The trains were built by Decauville and the electrical equipment is by Oerlikon.

Plans have been well advanced by Esso Petroleum Co., Limited, for an expansion of its distribution depot at Victoria Wharf, Cardiff. The project is estimated to cost £200,000 and its purpose is to increase the storage capacity and handling facilities to enable the company to keep pace with the growing demand for petroleum products. The development includes the erection of 12 large storage tanks.

A remarkable new adhesive named Pitabond has been introduced by Caulking Services, Limited, 36 Great Queen Street, London, W.C.2. Claimed to be a universal binder for almost every known fabric and material of construction, Pitabond is supplied in 1- and 5-gal. containers as a ready-to-use emulsion which can be thinned when necessary with water.



The former Caledonian Railway locomotive No. 123 in Caledonian blue livery, picked out with gold and scarlet, at the head of two former Caledonian Railway carriages also in the livery of the period, taking water at Stirling. The occasion was a special journey from Perth to Edinburgh Princes Street via Stirling and Larbert. The headboard bore the title "The Festival Special" in recognition of a party of journalists aboard which was making a tour of Scotland including advance arrangements for the 1958 Edinburgh Festival. This famous 4-2-2 has left the B.T.C. museum collection in order to operate occasional special services in the Scottish Region



### UNDERCOVER STORY

This is the interior of the Type HA Separate Point Machine specially arranged for Hand Generator operation—a fine example of British design and engineering skill. The machine is operated by our Type HR Hand Generator, both products being fully described in our Catalogue, Section H.

The Type HA Machine is also available for use on 110 volts A.C. or 110 or 30 volts D.C. It can be supplied for special high speed operation of points in hump yards.

Another interesting application is the 'sequential operation' facility which may be used for C.T.C. or remote locations where power supplies are limited; it provides that where a point layout requiring two machines is used, they may be arranged to operate one after the other, thus limiting the current drain on a small capacity battery to one machine at a time.

With improvements and additions the fundamental design of this machine has been proved over nearly 50 years and Signal Engineers may continue to install the Type HA with every confidence.

THE SIEMENS AND GENERAL ELECTRIC RAILWAY SIGNAL CO. LTD.  
EAST LANE - WEMBLEY - MIDDLESEX - ENGLAND

### Proved for the job

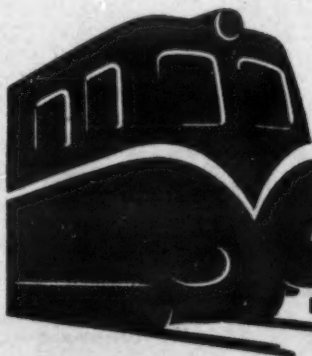


### HORIZONTAL DIESEL ENGINES

300-450 b.h.p.

The Paxman ZH represents one of the few serious attempts to produce a high-powered diesel engine for railcar underfloor mounted installations. These power units will fit conveniently below the floor of any standard loading gauge, and all parts needing attention of any kind, between overhauls, can be reached from the side at rail level. No access need be arranged from the inside of the car. Outstanding reliability has been proved by endurance tests running into several thousand hours, and also some 16 months of high-speed trials on service routes chosen for the severe gradient and adverse conditions encountered.

Paxman horizontal diesel engines are fully described in Publication 1528



# PAXMAN

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Associated with Ruston & Hornsby Ltd. Lincoln.



There is a  
range of  
**THORNYCROFT**  
VEHICLES  
for every TRADE and INDUSTRY



1,600 cu. ft. "Luton" van based on the long wheelbase "Swiftsure" chassis.

LORRIES · BOX VANS  
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## KENECOACH CONVERSIONS

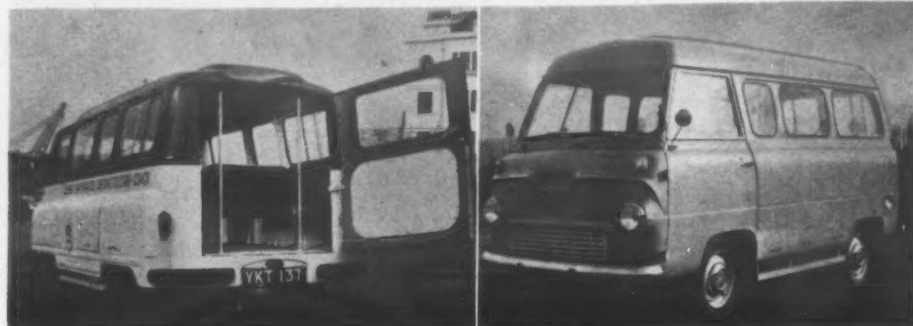
### Small P.S.V. Requirements Met

RECENT amendment of the Public Service Vehicle (Conditions and Fitness) Regulations has admitted to the sphere of legal operation in the carriage of passengers for hire or reward, provided certain requirements are met, small buses and coaches with seating for up to 12 passengers. Several existing vehicles falling into this category, already fitted for private passenger carrying as personnel carriers and station wagons, have been developed from popular goods vehicles in the 10-20 cwt. payload range, though few of these in their existing form meet the requirements in all respects.

A new addition to the range of specialised

ing up the original corrugated floor of the Austin and Morris vehicles.

Each of the vehicles is fitted with three rubber-glazed windows in each side of the body, with sliding sections in each rear unit. Seats for six passengers are arranged in the rear body in two transverse rows of two and one on each side of a gangway and for four passengers on two double seats arranged longitudinally on each side of the rear entrance platform. A full-height stanchion is fitted at each side of the platform. The seats have tensioned tubular-steel frames upholstered in latex foam and Layhairtex trimmed with Armoride and a wide range of colours is available.



Two versions of the new Kenecoach conversion on Austin 152 or Morris J2 van and, right, on Thames 15-cwt. van

vehicle conversions produced by Kenex, Limited, Castle Street, Dover, has been developed fully to meet the requirements of the amended regulations and has been named Kenecoach. This conversion is available on the Austin 152 and Morris J2 15-cwt. vans and on the recently introduced Ford Thames 15-cwt. van and provides seats for 15 children or 11 adults and the driver. The price in each case including the basic vehicle is £850. Normally, a vehicle with seating for fewer than 12 passengers is subject to purchase tax in the United Kingdom but negotiation between the manufacturer and the authorities has led to the Kenecoach being exempted from purchase tax.

#### Conversion Details

The basic vehicle in each case is the manufacturer's standard van in primer and front passenger seat, without the side-loading door and, in the case of Austin and Morris vans, with hinged instead of sliding front doors. Both the chassis and body are modified by Kenex to conform to all p.s.v. requirements and a fixed step is fitted at the rear, externally on the 152 and J2, each of which has a single wide rear door, and internally enclosed by the double rear doors of the Thames. The interior is lined throughout with embossed Kenite and the floor is covered with heavy-quality lino, after build-

The price includes exterior finishing in one of eight standard colours, from which two-colour schemes can also be selected at an extra cost of £5.

#### MOBILE SPRAY UNIT

##### Wakefield Machine for B.R.

DEVELOPED for use by British Railways for cleaning the underframes of rolling stock, a mobile spray unit, designated Model 3493V, has been introduced by Wakefield-Dick Industrial Oils, Limited, 67 Grosvenor Street, London, W.1. It is basically a 9-gal. pressure vessel equipped with facilities for spraying detergent mixture, which is also suitable for the application of any similar air-liquid mixture.

The pressure vessel is built to Board of Trade specifications and is equipped with a pressure gauge and a hose-isolating valve. The mixture is dispensed under high pressure through 40 ft. of hose terminating in a special spraying nozzle. A 40-ft. length of 1-in. hose for connection to an air supply is provided. The unit is mounted on a two-wheeled trolley and incorporates saddles on which the hose can be coiled when not in use.

## Casting Light...

better  
lighting  
by

# BENJAMIN

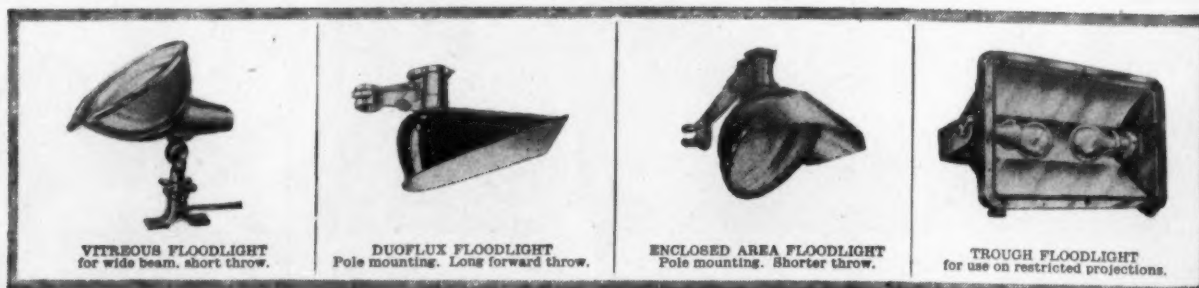


... on Wharfs, Sidings, Docks and Loading Bays—in fact, wherever road, rail, air and sea transport operate—calls for powerful, controlled beams of light.

Beams that not only illuminate, but eliminate danger risks lurking in the depths of shadow about the project under illumination.

The Benjamin range of outdoor fittings covers all the many aspects of this specialised form of lighting. A typical example is the large Specular Floodlight (illustrated alongside) which, with its long-throw, broad beam is ideal for tall facades, large car parks, etc.

If you have an outdoor lighting problem, please write for full details of Benjamin Outdoor Fittings.



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Smee's 112



## A LARGE CAPACITY SEMI-COACH

For Birch Bros. Services

**M**AKING its first public appearance at last month's British coach rally was the first of two lightweight all-metal semi-coaches for Birch Bros., Limited. These A.E.C. Reliances have 45-seat bodies by Park Royal Vehicles, Limited, and, as may be seen from one of the accompanying illustrations, a feature is the wide gangway.

In addition to a large luggage boot at the rear, they have three luggage lockers, two on the near-

side and one on the offside and also internal luggage racks. The folding doors are electrically operated and the moquette and leather upholstered semi-luxury seats are fitted with 4-in. Dunlopillo cushions, the seat pitch being 2 ft. 3 in. on the offside and 2 ft. 4 in. on the nearside. Unladen weight of the vehicles, which are to be based on the Rushden garage for service on the Bedfordshire area routes, is 6.175 tons.



One of two new lightweight A.E.C. Reliances with Park Royal bodywork for Birch Bros.

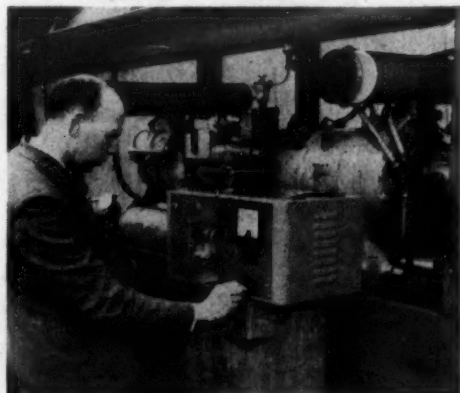


The interior of the 45-seat semi-coach showing the particularly generous gangway space

### OIL CONTAMINATION DETECTION

E.M.I. Direct Measuring  
Instrument

**D**ILUTION of lubricating oil with fuel oil and consequent impairment of its lubricating properties has been a long-standing problem in some types of diesel engine operation; so much so that periodic checks for such contamination often form a part of routine preventive maintenance. Hitherto, the means of detecting dilution in time to prevent damage has generally been



The E.M.I. portable electronic oil-contamination meter in use on an industrial diesel engine

by chemical analysis of an oil sample drawn from the sump, checking viscosity or flashpoint—both involved and slow processes.

Now, E.M.I. Electronics, Limited, has introduced a new electronic instrument which gives a simple direct measurement of the dilution on a meter, without any skill on the part of the operator. The instrument is self-contained and transportable and readings can be taken under operating conditions at the rate of one every 5 min. The sample to be tested is enclosed in a lagged chamber, low-pressure steam is passed through it and the vapour pressure at 100 deg. C. is measured. Because of the comparatively low temperature, any light fractions detected in the sample can only originate from the

(Continued at foot of next column)

### THE SERSEAL LAYER PROCESS

Stops Steam and Fumes  
from Tanks

**T**HE March issue of *Pretreatment News*, published by Imperial Chemical Industries, Limited, describes an important new I.C.I. process developed to prevent the unpleasant and harmful discharge of steam, spray and fumes which characterise many of the chemical treatments used in industry. Designated Serseal Layer Process, for which patent applications have been made, various grades of Serseal have been developed to suit different operating temperatures and characteristics of phosphating and acid pickling solutions and alkaline paint-stripping baths.

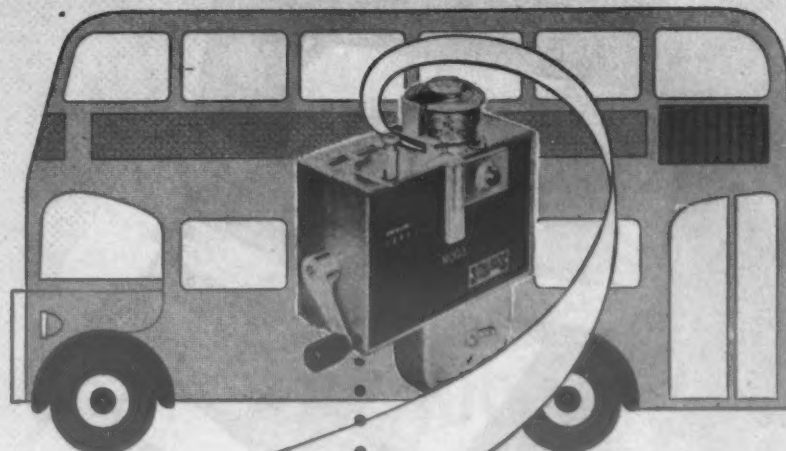
The Serseal process necessitates no structural modifications to existing plant apart from a simple trap fitted to the rinse tank to recover any Serseal material dragged out on processed work. It is brought into operation merely by adding a measured quantity of special activator to the processing solution and then to pour in the Serseal material. This floats on top of the solution, completely eliminating steam, fumes and spray. A secondary beneficial effect is that it also reduces chemical and heat losses. In fact, so great is the heat conservation effect that the output of the heating unit must be reduced by at least 75 per cent before Serseal is added, otherwise the liquid will boil over.

In its present form, Serseal cannot be used where contact with bitumen or rubber is likely to occur as these materials are softened by it. Also for the time being, subsequent degreasing in trichlorethylene is recommended for work that is to be painted. The Serseal process has been subjected to extensive field trials in which a number of leading industrial concerns have co-operated.

(Continued from previous column)

diluting fuel. Measurement is then performed by catalytic oxidation at the surface of a heated platinum wire.

When used with an oil of known characteristics, the instrument will indicate a true dilution to better than plus or minus 25 per cent of its indicated reading. Thus, if the meter indicates 4 per cent dilution, the actual dilution will lie between 3 and 5 per cent. Although accuracies of this order can be obtained by existing methods, the new instrument reduces the time necessary to achieve them from about 50 min. to five.



THE  
HEART  
OF THE  
BUSINESS...

The passengers' fares are the very life-blood of a public transport business. The conductor's ticket issuing machine is its very heart. If the business is to remain healthy, this heart must be not only strong, but 100% efficient, 100% accurate. That is why operators the world over depend upon Setright Registers.

The fraud-proof, fool-proof Setright ticket issuing machine lightens the conductor's task, even under peak travelling hour conditions; it automatically records takings and ticket issues; it saves labour in the making of returns, the compilation of statistics, in accounting. The Setright deals quickly and accurately with every aspect of fare collection, entirely eliminating return-ticket and interavailability problems. Don't let rising operating costs worry you: put new heart into the business by installing Setright Registers!



**SETRIGHT REGISTERS LIMITED**

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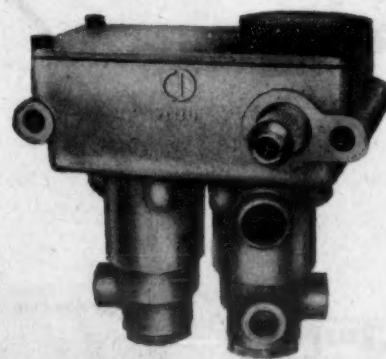
Telephone: AMHerst 7186 (Private Branch Exchange) Grams: Sefaregist, Easphone, London.

## This bus has a double safety feature in its braking system



THE DENNIS LOLINE—  
Photograph by courtesy of Dennis Bros., Ltd.

Here's the new Dennis Loline—a remarkable vehicle embodying many special features—one of which will soon be commonplace because it's a modern 'must'; air pressure braking incorporating a dual "E" brake valve and twin reservoirs to provide independent but simultaneous braking on front and rear wheels for greater safety—by Clayton Dewandre, of course!



DUAL 'E' BRAKE VALVE

**CLAYTON DEWANDRE CO. LTD.**

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AP37





## C.P. again for Bournemouth

Nine years ago we supplied the motors and control gear of twenty-four trolleybuses for the Bournemouth Corporation.

Last year the same Corporation ordered equipment from us for thirty new buses and this will be of our latest type with various features of advanced design.

At our Chelmsford Works we have been making electric traction equipment for something over sixty-five years. In the 1890's

we supplied electric locomotives for the first underground system, the City and South London Railway, and have amassed a wealth of experience since then. Today we are still at the forefront of traction equipment design, and besides supplying equipment for trolleybuses and other road vehicles, we are equipping underground trains abroad, and some of the latest and most powerful diesel-electric locomotives for British Railways.

### Crompton Parkinson

Member of the Nuclear Power Consortium:  
**ATOMIC POWER CONSTRUCTIONS LTD.**

TRACTION DIVISION, CHELMSFORD, ESSEX



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## BOOK NOTICES

### Trade and Technical

**TRADER HANDBOOK, 1958.** (London: Trader Publishing Co., Limited, Dorset House, Stamford Street, S.E.1. Price 17s. 6d., by post 19s.) The 52nd edition of this invaluable legal, technical and buying guide for the motor, motorcycle and cycle trades has again been revised and brought up to date to provide its traditional time-saving service to the industry and its customers. A particularly useful book for overseas concerns seeking contact with British suppliers.

**THE BEAMA CATALOGUE.** (London: For the British Electrical and Allied Manufacturers Association, 36 Kingsway, W.C.2, by Iliffe and Sons, Limited. Price 6s.) This fourth edition has been published earlier than usual in the year so as to be ready for distribution at the Brussels Universal and International Exhibition, which opened on April 17, where the British electrical and allied industry has an extensive collective exhibit in the British Industries Pavilion. Products of member firms are described and illustrated in classified sections and a five-language glossary of technical terms is included to assist overseas buyers.

**UNUSUAL RAILWAYS.** By John R. Day and B. G. Wilson. (London: Frederick Muller, Limited. Price 21s.) The conventional railway had hardly got going ere Henry Palmer must needs invent a mono-rail and busy inventors have been thinking up variegated forms of railways ever since, in addition to which sheer necessity has produced a number of variants on the orthodox railway to overcome such problems as steep gradients. The authors have compiled and illustrated a remarkable collection of schemes and accomplishments from ship-carrying railways through rack railways and funiculars to the variations of cable and atmospheric operation. Pneumatic tyre guide rails, monorails, overhead systems and pure freaks all receive their measure of attention and illustration. There is a mass of factual information between these covers on a fascinating subject, the interest of which has been much fanned of late by the feeling that specialised airport railways are being seriously considered.

**DIESEL CENTENARY.** (London: The Power Petroleum Co., Limited, 76-86 Strand, W.C.2. Gratis.) Published to commemorate the centenary of the birth of Rudolf Diesel—in Paris of German parents on March 18, 1858—the book traces the history of the compression-ignition engine since the first workable unit to Diesel's design was completed in Augsburg in 1897. Apart from omitting such names as Akroyd Stuart and Richard Hornsby and Sons in references to earlier work on oil engines, the coverage is as comprehensive as 43 pages permit and the book is particularly interesting for outlining the development of efficient diesel-engine fuels and lubricants and for illustrating a number of early diesel engines and applications.

**ECONOMIC SURVEY OF EUROPE IN 1957.** A United Nations publication. (H.M. Stationery Office, P.O. Box 569, London, S.E.1. Price 28s.) This survey is the eleventh in a series of reports prepared by the secretariat of the Economic Commission

for Europe. Its major object is to analyse recent developments in the European economy, reviewing economic tendencies during 1957 in eastern Europe and the Soviet Union as well as in the western European countries. A notable feature is a discussion of the growth of western European trade up to the present time and of the probable developments in the European economy, reviewable relevance to some of the issues of economic policy confronting European governments. A most comprehensive publication, containing also a review of developments and problems in the field of manpower and employment throughout Europe and the Soviet Union.

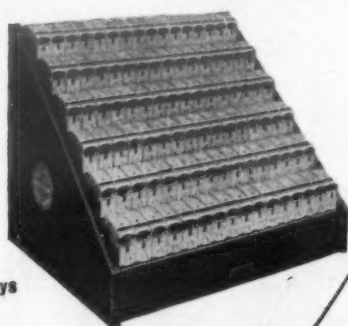
**TERYLENE IN INDUSTRY.** (Yorkshire: Imperial Chemical Industries, Limited, Fibres Division, Harrogate. Gratis.) An attractively illustrated book with text in four languages. It gives a lot of useful general information about Terylene, which name is a registered trade mark owned by Imperial Chemical Industries, including a table of comparative industrial properties with those of other man-made and natural fibres; in addition, the current applications of Terylene in various industries—marine, chemical and aircraft and for protective clothing and covers, belt drives and conveyors and hoses and pipework—are described and illustrated.

**BUSINESS IN GREAT WATERS.** (Liverpool: the Mersey Docks and Harbours Board, Dock Office, Liverpool, 3.) The history of the Mersey docks and waterways is, as this little book observes, the history of one of the earliest forms of public trust managements, a trust which is neither nationalised, subsidised nor profit making. The Mersey Docks and Harbours Board, which this year marks its centenary, was in fact the first of its kind, a corporate body whose constitution has been closely copied to good advantage elsewhere. Pioneers often pay the penalty of advancing age but the Mersey Board, as its present £17 million scheme for the improvement of the Langton—Canada Dock group indicates, is determined that its facilities shall march with the times.

**ALUMINIUM AND ITS ALLOYS IN ELECTRICAL ENGINEERING.** (London: The Aluminium Development Association, 33 Grosvenor Street, W.1. Price 20s.) Research and development over a number of years in the uses of aluminium and aluminium alloys in electrical engineering had reached a stage where comprehensive discussion between the aluminium and electrical industries would be profitable when the Aluminium Development Association convened a two-day symposium on the subject last year. This was held at the Institution of Electrical Engineers, London, on May 16 and 17, with an accompanying exhibition and demonstrations of jointing practice. The publication of the proceedings of the symposium, comprising 14 papers covering the whole field and both written and oral discussion arising, forms an extremely valuable volume, given the status of an international work of reference by authoritative contributions from many overseas countries.

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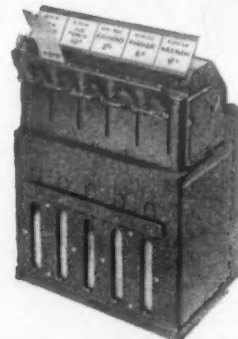
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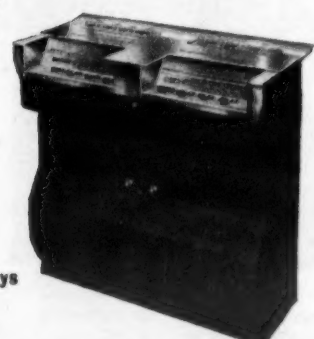
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## MECHANICAL HANDLING EXHIBITION

### Equipment for Transport Users

SINCE it was first staged, in 1948 at Olympia, the Mechanical Handling Exhibition and Materials Handling Convention has expanded 10 times in terms of floor space occupied. The sixth of the series, opened by Viscount Chandos at Earls Court on Wednesday this week, covers, it is stated, over 500,000 sq. ft. of space and will run until May 17.

There is usually something of a novel character at the exhibition; this year it is the electronically controlled truck system exhibited jointly by E.M.I. Electronics, Limited, and Wessex Industries (Poole), Limited, on stand 80. The Western Region of British Railways has placed an order for two Wrigley tugs, manufactured by the Wessex concern, for an experiment in its goods depot at Newton Abbot. This is a driverless system—over the desired route a wire taped to the surface for temporary operation or laid beneath the floor for permanent use. An a.c. fixed frequency current is passed through two sensing coils on the tug to keep it on the desired path. Starting and stopping signals can be given from any point on the circuit, but at the moment only one truck can be operated

units with, it is claimed, a particularly low centre of gravity.

A full range of its fork-lift reach pallet, and stillage trucks is on view on the stand of **Lansing Bagnall, Limited**, which is always a centre of attraction at this exhibition because of the frequent demonstrations which are mounted. A 4,400-lb. Clark fork truck, from the range of U.S.A. equipment due to be manufactured here by I.T.O., Limited, appears on the latter's stand.

#### Irion Carrier with Ford Engine

Manufacture of the Irion side-operating fork truck is now undertaken by **Materials Handling Equipment (Great Britain), Limited**, at its Maidenhead factory. The British-built Irion truck is to incorporate the Ford 592E industrial diesel engine, a 61.5 b.h.p. unit, and Ford gearbox, together with certain other new features. This side-operating truck is available in 1- to 5-ton capacities; a new 20-30 cwt. battery-electric version is shown. The exhibitor also shows a Valmet 15,000-lb. straddle carrier. This Finnish product has sold in large numbers. As shown it is powered



One of the Clark range of diesel fork-lift trucks to be manufactured in this country by I.T.O.; right, a Coventry Climax diesel truck equipped with special-purpose clamp

at a time. A servo motor, coupled to the steering mechanism, restores the truck should it wander from the path. The obvious merit of this system is that it enables experimental loading platform mechanisation to be readily introduced and changed after a period of trial. It is possible that the E.M.I. equipment could be supplied for other makes of truck with necessary modifications.

#### Industrial Trucks and Equipment

In this review, principally directed at exhibits of interest to the transport user or operator, attention is first given to fork-lift and pallet trucks and associated equipment. **Conveyancer Fork Trucks, Limited**, will strike a new note with a TC6 fork truck modified to run on liquid petroleum gas (L.P.G.). Conveyancer has recently introduced a reach truck to its range; one on show is equipped with tilting forks and a 3,000-lb. model has been developed. The TC range of diesel or petrol fork-lift trucks with torque converter drive now extends up to 6,000 lb. in capacity. The Skid-Stack attachment, dispensing with the conventional pallet, is another Conveyancer development which merits attention, as does a new stabilising load clamp on the E3-20 electric fork truck.

The Yale and Towne Manufacturing Co., Limited, is featuring series 51 electric rider-controlled fork trucks alongside examples of hand elevating trucks of which it claims to have 2,000 varieties to meet demands for capacity up to 6,000 lb. from its enlarged works at Wednesfield, Staffs. Already in use by British Railways, the Freightlifter model 100 Dualdrive 18,000-lb. heavy-duty fork-lift truck displayed along with others in the Freightlifter range by **Shelvoke and Drewry, Limited**, is the standard model 100 modified to provide duplicate driving positions. There are twin cabs so that the driver can travel longer distances facing forward and in perfect safety with unimpaired vision. Equipment such as this is being increasingly ordered

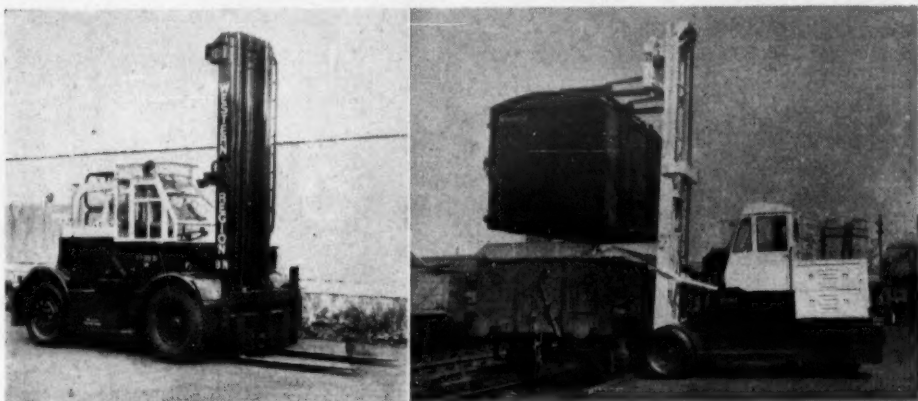
by a Perkins P6 diesel and has swinging load hooks and four-wheeled steering.

With the introduction of a model NR40, for 4,000-lb. loads, **Ransomes, Sims and Jefferies, Limited**, has four models in its NR fork-lift truck series, with capacities from 1,500 lb. to 4,000 lb. These are battery-electric units with small turning circles and reduced weight and dimensions while still in line with stability margins. The latest



A novel answer to the pallet problem—this Conveyancer truck has a four-prong fork attachment to pass through crates of bottled beer used as a base for unit loads of a similar product in cans

NR40, on show for the first time, incorporates a dual-speed motor; by altering terminals the top speed unladen may be set at either 4½ or 5½ m.p.h., thus enabling power to be conserved when floor conditions require the lower speed. Initial starting



Two 18,000-lb. heavyweights: the Shelvoke and Drewry Dualdrive Freightlifter has twin cabs, the Rapier 18/33 fork truck lifts a railway container by the normal slinging points

by the railways to assist in the rapid transfer of containers between road and rail under the modernisation programme.

#### Container Handling

A newcomer to the range of heavy-duty fork-lift trucks offered by **Ransomes and Rapier, Limited**, is the Rapier 18/33 18,000-lb. model. This class of truck can lift a loaded 6-ton B.R. container on the forks, or thanks to the 20-ft. lift, slung from a special frame which can be fitted without removing the standard forks. A searcher jib is available for work inside covered railway vans. The Rapier Super slewing-mast fork-lift truck is shown at Earls Court.

In addition to its Spacemaster range of three-wheeled electric fork trucks which **Coventry Climax Engines, Limited**, introduced at the 1956 exhibition, this manufacturer is now showing a new Universal range of four-wheeled electrics in 2,000-, 3,000- and 4,000-lb. models. The 4,000-lb. models will also be available with diesel or petrol (including L.P.G.) power units. These are long-wheelbase

current, it is claimed, is reduced by almost 50 per cent when using the lower top speed rating. A fifth position is optional for use in conjunction with the slow speed motor.

#### Small Fork Trucks

A new version of the Paliton power pallet truck, model EP40, is one of the popular exhibits on the stand of **Omic, Limited**, along with the Teddy battery-electric tractor, rated at 5 tons continuous capacity and 12 tons intermittent capacity. A 30-cwt. three-wheeled cushion tyred reach truck has been developed by **Wessex Industries (Poole), Limited**, manufacturer of Wrigley equipment. It is suitable for 48-in. pallets. Also on this stand is a new 10-ton electric tractor. Products also include a 10-cwt. pallet truck, 30-cwt. platform truck, electric fork-lift trucks and a dumper. A reach truck with extending forks is on view on the stand of **G. Hunter (London), Limited**.

Three examples of 10-ton mobile cranes form the largest exhibits on the principal stand of **Geo.** (Continued on page 11)

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for the new **KEW DODGE**  
**7-tonner**

Latest of a long line of Dodge trucks that have earned a reputation for rugged reliability, is the forward-control **KEW DODGE 7-tonner** which made its debut early in March. In this and previous designs, Dodge Brothers (Britain) Ltd. have relied on the Inherent Dependability of Hardy Spicer transmission shafts and universal joints.

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standard equipment on most British trucks and on many manufactured overseas

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## NEWS FROM ALL QUARTERS

#### Wankie Coal Export Rate Cut

A steep reduction in the rates for export coal has been announced by the Rhodesia Railways. The basic rate of 37s. 6d. a short ton from Wankie colliery to Lourenço Marques represents a reduction of 10s. 3d. a ton on the present rate of 47s. 9d. Intense competition in consumer markets is given as the reason.

#### Scottish Car Trains

The Scottish Region introduced for the first time on May 4 new trains to encourage motorists to take their cars by rail from Glasgow to Inverness, Thurso, Wick, Aberdeen and Oban, and from Edinburgh to Inverness, Thurso, Wick, Aberdeen, Oban and Stranraer (Town or Harbour Station), also in the reverse direction in each case.

#### Sheffield to Merseyside Freight Train

A new through express train for export traffic between Sheffield and district stations and the Merseyside ports of Liverpool and Birkenhead was introduced by the Eastern Region on April 21. It runs on Mondays to Fridays inclusive, giving an early morning arrival at the ports on the day following dispatch. Acceptance is up to 5 p.m.

#### M.A.N. Designs in India

Hindustan Aircraft, Limited, of Bangalore, is prepared to manufacture integral railway coaches in collaboration with the German M.A.N. concern. This marks the third phase of Hindustan rolling-stock production as a major subsidiary project. The first integral coach is expected to be manufactured shortly and a production programme of five a month is expected to get under way from October this year, initially with imported shells.

#### Railway to Masasi

In view of the need to increase the traffic on the Southern Province Railway and at Mtwara Port in Tanganyika, the Transport Advisory Council has approved a proposal to construct a 23½-mile extension from the existing line at Chilingula (15 miles east of Nachingwea) to Masasi, an important trading centre in the Southern Province. It is hoped that the line, which will be built to a light traffic standard only, will be in operation by the end of this year.

#### Preston-Birmingham Motorway

The Minister of Transport has announced his decision to proceed with the making of a scheme establishing the major part of the line of the proposed Preston-Birmingham motorway, proposals for which were published in April, 1957. Because of great difficulties, mainly the risk of subsidence, that have come to light in the way of establishing a generally acceptable line for the remaining southern part of the motorway down to the Birmingham conurbation, the Minister has decided that he will make the scheme for only that part of the draft line which extends from the southern end of the Preston-by-pass to south of Stafford at a point near Dunston where the motorway will intersect A449, a distance of about 77 miles. The remaining section is to be reinvestigated with a view to overcoming difficulties.

#### Long One-Way Streets in East London

The Minister of Transport is making an order which will convert Cable Street and The Highway, Stepney, into one-way streets east- and westbound respectively, for an experimental period of six months. These streets run closely parallel for about 1½ miles and will therefore constitute the longest one-way working in London. The experiment is linked with new traffic arrangements for the Tower Bridge approach on the northern side.

#### Fellgate Bridge

Fellgate railway bridge and its immediate approaches carrying the Sunderland-Newcastle railway line over road A1055 are to be rebuilt to obviate a bottleneck. The scheme includes the realignment of Leam Lane and will cost nearly £130,000. The existing bridge has a headroom of only 13 ft. 6 in. and a width between the abutments of 19 ft. 6 in. Route A1055 will eventually form the main approach to the future Tyne Tunnel from A1.

#### Post-Stressed Railway Bridge

A new 122-ft. span railway bridge constructed in post-stressed concrete beams is being erected by the London Midland Region in Manchester. It will carry the Stockport-Manchester line over Stockport Road and replaces two existing bridges which were not suitable for supporting the ballasted tracks required for the intensive traffic planned under future electrification. The 64 hollow concrete blocks, 35 tons each, are being hauled by rail from near Norwich.

#### Directory of Labour Associations

A new edition of the Directory of Employers' Associations, trade unions, joint organisations, etc., corrected up to January, 1958, has been compiled by the Ministry of Labour. It is available from H. M. Stationery Office, price 8s. net, and contains the title and name and address of the secretary of every organisation in the United Kingdom of employers, of workers and of employers and workers jointly, directly concerned with the negotiation of wages and working conditions, or which provides representatives on bodies which are so concerned.

#### Seat Control for Glasgow Fair Holidays

For the first time the Scottish Region of British Railways is to introduce this year a new arrangement which is to provide every passenger with a seat, eliminate overcrowding and obviate unnecessary and prolonged queueing at the start of the Glasgow Fair holidays. This is a system of regulated train control for second-class accommodation which will apply on Friday, July 18, and Saturday, July 19, from the four main-line stations—Buchanan Street, Central, Queen Street and St. Enoch. Intending passengers will purchase their rail tickets as far in advance as it is possible for them to do so, and a free train control ticket will also be issued to them for the train of their choice. If the train chosen is full an alternative service will be offered. Only those in possession of a control ticket will be permitted to join the train. Bookings opened on May 5. Advertised reserved seats may be obtained in the usual way.

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- ① **DUAL PURPOSE ON-AND-OFF-THE-ROAD**  
Combines long, smooth wear on metalled surfaces with extra traction and pulling power on unmade roads.
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New, long-wearing, cut-resisting tread rubber gives longer non-skid mileage.

- ③ **TOUGH RUGGED TRACTION BARS**  
Give added stability on the road, dig in and take hold for extra traction off the road.
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Assure safe, positive stopping power and longer even wear. New tapered grooves in tread reduce stone trapping.
- ⑤ **TENSION-DRIED GUM-DIPPED CORD**  
Prevents tyre growth, tread cracking, separation and provides a stronger bonding between cords.

**Experience Counts—**

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**Firestone ALL-TRACTION TRUCK TYRES** Give BETTER PERFORMANCE and CUT COSTS for on-and-off-the-road hauling, on farms, quarries and other places where dual-purpose tyres are needed.

**Firestone TYRES — consistently good**



**DRIVE SAFELY**





## COMMERCIAL AVIATION

### B.E.A. Makes a Million

#### TORONTO AIRPORT

**P**LEASURE at being able to announce an estimated net profit, after interest on capital, of a little over £1 million for the year ended March 31, 1958, is expressed by Lord Douglas of Kirtleside, chairman of British European Airways, in his latest message to its staff. He points out that because of the slowing down of traffic growth the budget for the new financial year is based upon a more conservative rate of expansion than previously. Nonetheless B.E.A. expects to carry over three million passengers during 1958-59. It expects an overall traffic increase of about 10 per cent.

#### Profit for Avianca

Avianca, the Colombian airline, carried 1,082,776 passengers, a load factor of over 65 per cent, in 1957 the airline announced recently. The total profit was £1,028,000.

#### Britannia to San Francisco

Long-range Bristol Britannia aircraft operated twice weekly between London and San Francisco by B.O.A.C. since May 6 are scheduled to make the journey, including a 1½-hr. stop at New York, in 22½ hr., 2½ hr. faster than the DC7C schedule for the route.

#### New M.E.A. Office in London

On May 2 the Lebanese Ambassador in London formally opened the new offices of Middle East Airlines at 69 Piccadilly, W.1. These premises, which were previously occupied by Qantas Empire Airways, have been rearranged most effectively and adapt features of Lebanese design to London purposes with great skill.

#### New I.A.T.A. Members

Aerlinite Eireann (Irish Airlines) and Austrian Airlines have been admitted as active members in the International Air Transport Association, it has been announced. Admission of these two carriers—both of which began their international operations within the last 60 days—brings to 84 the number of airlines in the world airlines organisation. Of these 75 are active and nine are associate members.

#### B.O.A.C. Cargo Branch Moves

The cargo department of the British Overseas Airways Corporation, formerly at Airways Terminal, Buckingham Palace Road, has now moved to 14 Dilke Street, Chelsea Embankment, London, S.W.3. The move has been made to allow alterations and improvements at Airways Terminal to be completed. Until these have been carried out, B.O.A.C. will be sharing B.E.A. cargo facilities at Dilke Street. The full cargo service offered by B.O.A.C. will continue to be available.

#### Tu104 for Inclusive Holidays

Recently the Soviet authorities approached Horizon Holidays, a pioneer in direct charter flight holidays, with the suggestion that it should charter the Tu104 for tours of the U.S.S.R. It was announced last week that the first departure from London will be on July 26 and that the flight to Moscow will take 4½ hr. The tour of 15 days will include visits to Moscow, Leningrad and Kiev and a cruise on the Moscow Volga waterway. The arranged tour includes staying at the best Intourist hotels, meals, transport, sightseeing and gratuities. The all-inclusive cost is 149 guineas.

#### Swissair Air-Sea Agreements

Swissair has recently concluded interim air-sea agreements with a number of shipping lines serving Far Eastern ports. They are Anchor Line, British India Steam Navigation Company, Blue Funnel Line, P. and O. Steam Navigation Company, and Glen Line. Swissair already has air-sea agreements for Far East traffic with Compagnie des Messageries Maritimes and Lloyd Triestino. Under the agreements, combined air-sea passages providing the usual round trip discount can now be sold between the U.K. and Ireland and Greece, Egypt, the Lebanon, Pakistan, India, Thailand, Hong Kong, the Philippines and Japan, in conjunction with Swissair Far East services.

#### P.A.A. Operating Revenues

Operating revenues of Pan American World Airways reached in 1957 a record figure of £111,678,600. Net income for the year, after taxes, was £2,928,572, compared with £5,071,430 in 1956. Operating revenues during 1957 were 8.2 per cent over the £103,214,400 recorded in 1956, and Mr. Juan T. Trippé, the president, pointed out that 1957 was the first year in the company's 30-year history in which no subsidy was included in operating revenues. Passenger revenue amounted to £84,893,000 and cargo revenue £11,167,150, both increases over 1956. Operating expenses rose by 11.7 per cent although the unit expenses were reduced despite increased costs of material and labour.

#### The Viscount in New Zealand

During its first eight weeks of operation the New Zealand National Airways Corporation's Vickers Viscount turboprop air liner carried 7,756 passengers between Christchurch and Auckland. This represented a 40 per cent increase over the corresponding weeks of the previous year. Despite the fact that the introduction of the Viscount doubled the number of seats available on the route, the passenger load factor was maintained at 75 per cent. Originally it was planned to remove eight seats from the forward compartment of the Viscount, and use this for freight. The passenger traffic, however, has been such that it was decided to continue to operate the aircraft as a 60-seater. N.Z.N.A.C. has two more Viscount 800 series aircraft on order for delivery early next year.

#### Toronto Airport Project

Plans for new terminal facilities at Malton Airport, Toronto, are well advanced and work is expected to commence this year. The initial construction is estimated to cost \$20 million. The new terminal building will consist of one central structure housing administrative and operational offices and four circular buildings or aeroquays from which passengers will embark and deplane. Only two of these aeroquays will be constructed in the initial stage. The site for the new terminal facilities will be approximately one mile south-east of the existing terminal buildings which will be utilised for other purposes when the new project has been completed. One of the features of these aeroquay buildings is that passengers will be able to drive their cars to within 100 ft. of the aircraft they will board and, in addition, park the vehicle in a multi-storey parking structure overhead. The roofs of the aeroquays will be fitted as heliports.

## DEATH OF LANCASHIRE UNITED CHAIRMAN



The Late Colonel Sir JOSEPH NALL, Bart.,  
D.S.O., T.D., D.L., J.P., M.Inst.T.

The death in Manchester on May 2 of Sir Joseph Nall, shortly after he had presided at the annual general meeting of Lancashire United Transport, Limited, must surely have accorded with the wishes of one who always kept his hand to the plough. He had indeed been connected with the transport and other industries for many years. During the periods in which he represented the Hulme division of Manchester as its Member of Parliament (1918-29 and 1931-45) he devoted much time to the study and solution of transport problems. He was a member of the select committee upon the report of which was based the London Traffic Act, 1924, and he had been closely concerned with the work of the Institute of Transport, of which he was a past president. Sir Joseph, who was born on August 24, 1887, entered the office of the family firm of Joseph Nall and Company, carrier and railway cartage agent, in 1904, and in 1935 he became chairman and managing director of the company. The undertaking became vested in the British Transport Commission when that body was established by the Transport Act, 1947. He joined the East Lancashire Royal Field Artillery (Territorial Force) in 1906 and became staff captain (Royal Artillery) in August, 1914, serving throughout the 1914-18 war with the 42nd (East Lancashire) Divisional Artillery in Egypt, Gallipoli and France. He was wounded in action, mentioned in dispatches, and awarded the D.S.O. He was a colonel (retd.) of the Territorial Army and honorary colonel of the 253rd Field Regiment, Royal Artillery (T.A.)—"The Bolton Artillery." He was knighted in 1924, created a baronet for political and public services in the New Year Honours of 1954, and in 1952-53 was High Sheriff of Nottinghamshire. He was a deputy lieutenant and justice of the peace of that county and a deputy lieutenant of Lancashire. He was a member of Nottinghamshire County Council from 1933 to 1946. As a transport man he made many years ago some suggestions regarding the operation of trams in Llandudno and as a result was invited to join the board of the company and of other tramway and bus operating associates of the Balfour Beatty group, with which he continued to be associated until after their transfer to the B.T.C. Chairman of Lancashire United Transport, Limited, and its subsidiary, the South Lancashire Transport Company, he was also chairman of the Llandudno and Colwyn Bay Electric Railway, Limited, and his directorships included Trafford Park Estates, Limited, its railways subsidiary, the Trafford Park Company, and Trafford Park Cold Storage, Limited. He was an honorary member of the Public Transport Association, with the work of which and its predecessor the Public Service Transport Association, he had been closely associated as a council member and chairman, and a former president of the Omnibus Society. The bus industry has lost a forthright character and a keen intellect by his passing.

## IN PARLIAMENT

### Brake Conversion Retarded

#### ROAD ACCIDENTS AT NIGHT

**T**HE Minister of Transport, answering a question about the programme for automatic vacuum brakes on rail freight wagons, admitted that it was reduced as a result of the capital investment cuts for 1958 and 1959. In addition, the programme for fitting 16-ton mineral wagons has been interrupted because it has been found that the braked wagons cannot be handled by some of the older type tippler gear at industrial plants until some modification of the gear has been carried out.

#### B.T.C. Track Costs

Mr. R. PAGE suggested unsuccessfully legislation to oblige the British Transport Commission to sell all its assets other than the permanent way and signalling apparatus, and for the Treasury thereafter to maintain the latter upon some basis similar to that applying to trunk roads. Mr. G. R. H. NUGENT, in a second answer on this subject, said that the book value of permanent way, buildings, etc., was about £903 million and that of rolling stock, etc., about £413 million.

#### More Road Accidents at Night

Why was there an increase of 10.2 per cent in road accidents at night during 1957, while accidents during the day decreased by 0.9 per cent, Mr. R. PAGE asked. The Joint Parliamentary Secretary to the Ministry of Transport, Mr. G. R. H. NUGENT, suggested that there were more road accidents at night because the rate of traffic increase had been rather faster by night than by day. In addition, the figures for 1957 were affected by a change in the definition of hours of darkness during summer time.

#### Oil Imports in British Tankers

Asked what percentage of oil imported into this country was carried in ships flying the British flag in each of the past four years, the Joint Parliamentary Secretary to the Ministry of Transport, Mr. AIREY NEAVE, estimated that in the years 1954, 1955, 1956 and 1957, 41 per cent, 40 per cent, 38 per cent and 36 per cent respectively of oil imported was carried in ships flying the British flag. The actual quantity of oil imported in such ships remained about the same. Total British tanker tonnage had increased during the four years by 21 per cent, but many tankers did not touch British ports.

#### Discussions on Flags of Convenience

The Prime Minister rejected a suggestion that he should establish, under the chairmanship of a Cabinet Minister, a committee consisting of representatives of the Treasury, the Ministry of Transport and Civil Aviation, the Admiralty and the shipping industry, to consider the problems now confronting British shipping, with particular reference to flags of convenience. Mr. MACMILLAN said that discussions on flags of convenience and other similar matters were going on between the Minister of Transport and the General Council of British Shipping, but the General Council had not yet put forward its specific proposals.

## MECHANICAL HANDLING

(Continued from page 9)

**Cohen Sons and Co., Limited.** They are the Jones KL10-10 Fast Travel lorry-type crane, a KL10-6 four-wheeled steering model and the KL10-6 as a rail-mounted unit with a shunting capacity also of up to 125 tons. The KL10-6 is also seen in the exhibition area as a lorry-mounted unit, using a special A.E.C. crane carrier chassis with 11.3-litre engine. Rapier mobile cranes are represented on the Ransomes and Rapier, Limited, stand by a new Rapier 4 Fast Standard model which, as its name implies, has a good road travelling performance for inter-depot service on railways or elsewhere in transport. At the same time the unit has manoeuvrability associated with the conventional mobile crane chassis.

Four from a new range of Coles diesel-electric cranes ranging in capacity from six to 45 tons are shown by Steels Engineering Products, Limited. These are self-propelled, truck-mounted and shunting loco cranes. Improvements introduced are ball bearing slew ring and a system of pilot switch control of motions. To operate the desired motion the driver engages the appropriate switch mounted on a console while the engine is running at reduced speed. The speed of motion is thereafter controlled through use of the accelerator. An M.E.11 8-ton truck crane, using a Ford AWD chassis powered by the Ford 6D diesel, has been introduced by Thomas Smith and Sons (Rodley), Limited, to supplement the existing M.E.I. model. The newcomer has a separate Ford 4D diesel for crane motions and the recently introduced Smith power-lowering mechanism is incorporated.

#### Tractors

Alongside examples of industrial tractors, the Ford Motor Co., Limited, exhibits for the first time the Dexta industrial power unit, a 32-b.h.p. three-cylinder diesel intended for applications where a less powerful unit than the Major will suffice. Disc brakes and differential lock are featured in a new version of the B-250 industrial tractor of International Harvester Co. of Great Britain, Limited.

C. H. Johnson (Machinery), Limited, offers a range of Cadet lifting platforms, with capacities from 1½ to 15 tons and suitable for use, inter alia, for vehicle alignment with loading platforms. The largest of these platforms measures 26 ft. 3 in. by 7 ft. 7 in. and operation is by electric motor through the medium of vertical screws in one or more vertical guiding posts, or by wire rope. Mitchell Engineering, Limited, shows a model of its Parcar vertical car parking system, which features 12-car lifts with automatic discharge at the required floor, and a mechanical slipway model for overhauling large tankers. The vessel rests at low tide on a series of wheeled keel blocks running on a carriage-way and is hauled by this means up a slipway above high water level. It is claimed that tankers of up to 50,000 tons displacement could be handled. The Westinghouse Brake and Signal Co., Limited, exhibits pneumatic control equipment, also a control desk for operation of mine cars.

The London office of Permal, Limited, is changed to 39 Victoria Street, S.W.1, and it also becomes the London office for the associated companies of Hordern Richmond, Limited, and Hyddulghum-Jabroc (Tools), Ltd. The telephone number, ABBey 6494, remains unchanged.



Striking tribute to  
**NEW Perkins**  
**FOUR 99**  
1.6 litre diesel engine

**FOR GOODS AND PASSENGER VEHICLES, MOTOR CARS, TAXICABS, AGRICULTURAL APPLICATIONS AND INDUSTRIAL PLANT AND EQUIPMENT OF ALL KINDS.**

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Motor car ratings: 43 b.h.p. at 4,000 r.p.m.

Agricultural ratings: 35 b.h.p. at 3,000 r.p.m.

Industrial ratings: 32 b.h.p. at 3,000 r.p.m. for continuous operation in approved applications under conditions of B.S.S. 649/1949. 35 b.h.p. at 3,000 r.p.m. to suit intermittent loading.

R.A.C. certified fuel consumption in Vauxhall Velox car 56.6 m.p.g. at average speed of 34.8 m.p.h. over test route of 218 miles. Similarly R.A.C. certified fuel consumption for a Ford Consul was 50.8 m.p.g. at average speed of 34.7 m.p.h.

This engine is no ordinary diesel—it is a tremendous step forward; we are in a new era here of flexible power with economy in fuel consumption which we have not hitherto found possible.  
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## OF ELECTRICS AND FUEL INJECTION

### Useful C.A.V. Western Forum

**A**LL-ROUND benefit resulted from the interchange between about 250 agents for and operators of C.A.V. electrical and fuel-injection equipment and a C.A.V. staff panel when they met in Western Forum, which formed one of the business sessions of the Western Area Agent's Conference held at Torquay last week by C.A.V. Limited. Among the questions answered were a number of general interest to the transport industry.

A suggestion that there was a need for a repeater flashing direction indicator for fitting to the sides of a vehicle which already had flashing signals at front and rear, and that the present side-fitting unit was too large for the purpose, brought the

satisfactory on goods vehicles but not on urban buses, which spent some 20 per cent of their operating time idling. With the idling speed set at 350 r.p.m., the average bus engine consumed one-fifth of a gallon per hour and on this basis, a bus operated at 12 m.p.h. average speed with a fuel consumption of 10 m.p.g. would show an improvement of 3½ per cent if the engine was stopped while the bus was stationary. If idling speed was reduced to 300 r.p.m., the saving would be 0½ per cent (representing about £5 per bus per annum on average) with conventional clutch and gearbox and 1½ to 3½ per cent with fluid flywheel when idling took place with a gear engaged.

Lower idling speeds were not possible with mechanical or pneumatic governors but the C.A.V. hydraulic governor was designed for slow idling at about 160 r.p.m. and 300 r.p.m. was entirely practicable. There was a lot more work in producing the hydraulic governor, which accounted for its higher price, but it was still an economic proposition as it was giving 200,000 miles or more of trouble-free service and then required few renewals. This compared with about 100,000 miles for a mechanical governor.

A plea for greater accessibility of injection pumps, possibly by driving them through extension shafts and mounting them at cylinder-head level, brought the response that this was one advantage of the distributor-type pump, which was now in wide use on small goods vehicles. It was over its teething troubles and there were now 100,000 DPA pumps in service. Pumps suitable for larger sizes of diesel engine were coming along well. Its advantages were generally lower price, few working parts and no highly stressed springs, it required little maintenance and no lubrication, would operate satisfactorily at much higher speeds and could be mounted nearer the engine, thus shortening the fuel pipes.



Official reception at the C.A.V. Western Area Agents' Conference: Councillor A. L. Goodrich, Mayor of Torquay, Mr. T. L. C. Strange, general manager, Devon General (left), and Mr. H. G. Mason, director and joint general manager, C.A.V. (right)

news that C.A.V. was now producing a suitable small lamp. This would be available as soon as the present regulations regarding minimum area of signalling lamps were amended to permit the use of small repeater. A question about a.c. generators of a suitable capacity for aircraft fuellers brought the latest news of C.A.V. progress in this field. Many a.c. generators were at present at work on buses with selected operators and these were working satisfactorily, advantages being their small dimensions for a given capacity and their ability to provide a substantial proportion of rated output at low speed. These machines were rated at 60 amp. at 24 volts, too large for goods vehicles generally, but a suitable unit was being developed.

#### Cost of Diesel Idling

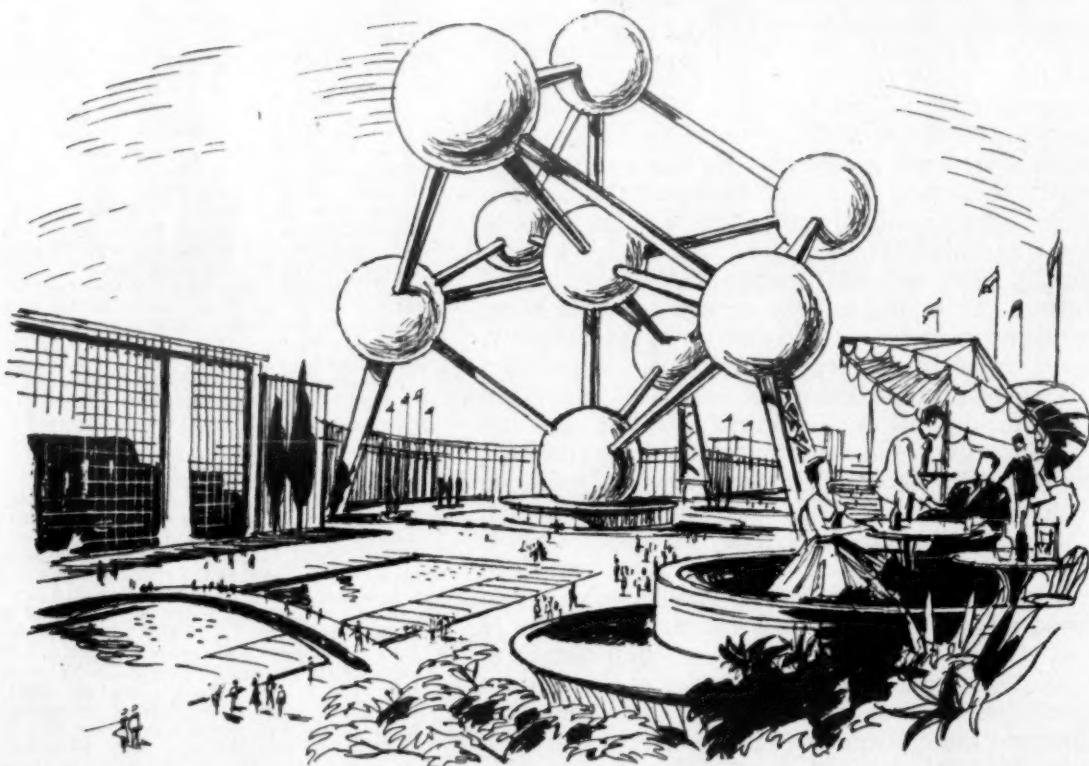
Questions on the effects on fuel consumption, maintenance and life of reducing idling and limiting top speeds and the advantages of the hydraulic governor elicited some interesting figures. Present idling speed of about 350 r.p.m. was probably

#### Automatic Transmission

During the afternoon business session of the conference, delegates heard and discussed a paper, *Vehicle Transmission Control Systems*, presented by Dr. W. D. Sutherland, C.A.V. chief development engineer (electrical). The paper sketched the history of development of control systems for the Wilson planetary gearbox and explained the current C.A.V. control system (described in MODERN TRANSPORT for January 26, 1957) which provided completely automatic gearchanging for this type of box.

An extremely well-produced colour film showing the conditions under which the DPA fuel-injection pump underwent part of its field trials was screened twice during the conference. Entitled *The Fish Run*, the film showed vehicles of Charles Alexander and Partners (Transport), Limited, Aberdeen, making the fish delivery run between Aberdeen and Manchester, each vehicle covering 2,100 miles a week, in which the DPA pump amassed a total of 250,000 miles.

## More than 1,000 Tons of Aluminium at the Brussels World Fair



The Atomium, symbol and centre of the Brussels World Fair 1958. This 320 ft. high structure represents an elementary iron crystal. The nine large spheres, each 59 ft. in diameter, are made from steel, clad with high purity electrolytically-brightened aluminium. The spheres, which are connected by tubes enclosing escalators, house exhibits showing the results of research into peaceful uses of atomic energy.

Aluminium is once again proving itself to be the Metal of the Age in this era of scientific adventure. Architects and designers of many nations are using this strong, light, corrosion-resistant metal with imagination and ingenuity at the Brussels World Fair in the national pavilions and exhibition halls. Here are just a few examples:

#### CANADIAN PAVILION

Aluminium span windows, stairway and external doors.

#### BRITISH PAVILION

30 tons of NORAL aluminium used for the roof.

#### AMERICAN PAVILION

Aluminium extrusions used to support transparent plastic roof.

#### RUSSIAN PAVILION

340 tons of aluminium sheet and extrusions used in the roof.

#### SPANISH PAVILION

Aluminium window frames.

#### TURKISH PAVILION

Aluminium roof.

#### PALAIS DES TRANSPORT

150 tons of Aluminium used in the roof structure.

#### PALAIS II

About 70 tons of aluminium used for the anodised facade.

#### PALAIS DE L'ELECTRICITE

An aluminium facade.

#### ROAD TRANSPORT VIADUCT

2,600 ft. viaduct will incorporate a decorative aluminium balustrade.

If you are visiting the Fair make a point of seeing the Kitimat-Kemano and Aluminium Exhibits at the Canadian Pavilion



**Aluminium Union Limited**

(Incorporated in Canada)





## NEW INDUSTRIAL LOCOMOTIVE

### The Hunslet Yardmaster

A NEW look in the field of the light industrial diesel shunting locomotive is provided by "The Yardmaster," latest product of the Hunslet Engine Co., Limited, Jack Lane, Leeds, 10. Apart from the usual seated driving positions at both sides of the cab, the locomotive can be handled by finger control from the steps at either side, thus obviating the need for the driver to



The Hunslet Yardmaster industrial locomotive

#### LEADING DIMENSIONS

Rail gauge	Metre—3 ft. 6 in.—
Diameter of coupled wheels	4 ft. 4 in.
Wheelbase	2 ft. 9 in.
Height overall	5 ft. 5 in.
Width overall	5 ft. 6 in.
Length over buffer beams	8 ft.
Speed first gear in either direction	13 ft. 3 in.
Speed second gear in either direction	5 m.p.h.
Fuel capacity	10 m.p.h.
Weight in working order	75 gal.
Maximum tractive effort first gear (limited by adhesion)	13 tons or 15 tons
Tractive effort first gear at max. speed	8,800 lb. or 10,200 lb.
Ratio, adhesive weight/tractive effort	4,000 lb.
Minimum radius of curve engine will traverse with ease	2,000 lb.
Weight per yard of lightest rail advisable	3.3 to 1.
	60 ft.
	35 lb.

climb up and down when performing shunting operations, such as changing points and attending to wagon couplings. During busy periods, the driver can, in fact, carry out all his duties at just

above rail level, standing on the shunting platforms, and having the controls within easy reach. This "step on step off" feature considerably speeds up shunting and greatly reduces driving fatigue, especially during peak periods. The Yardmaster is of neat and attractive appearance, enhanced by the central position of the cab. Visibility from the cab is excellent, the driver's field of vision being aided by the fitting of one-piece windows at the front and rear. The cab can be either of the open type or fully enclosed, and fitted with cab heaters according to needs.

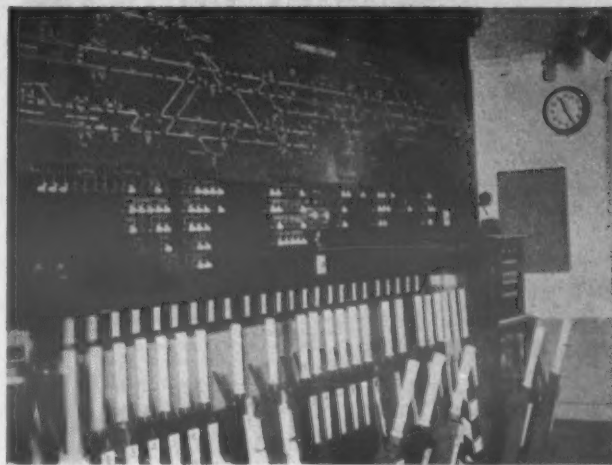
#### Engine and Transmission

The locomotive is powered by a Gardner 4LW or Dorman 4LB water-cooled diesel engine developing 71 b.h.p. at 1,700 r.p.m. There is an electric starter. Transmission from the engine is through Layrub couplings to the Hunslet torque converter unit and two-speed gearbox. The torque converter is of the simple single-stage type.

The gearbox is of the constant mesh type, robustly constructed to give long and trouble-free service. The gearbox and torque converter unit are manufactured as a single assembly to ensure that perfect alignment is maintained. In view of the fact that the Yardmaster has been designed for exceptional simplicity of control, ease of gear selection has received special attention. The selector lever, which can be operated by finger pressure, operates a hydraulic control valve which directs oil pressure to the particular gear clutch selected. These clutches are of the multi-plate type having sintered metal face linings for long life. Considerable time has been spent over their development to ensure complete suitability and reliability for locomotive operation. The advantages of this clutch are that its hydraulic operation makes it light to operate, the time taken in changing gear is negligible, and above all it is unnecessary for the operator to synchronise the shaft speeds as this is performed automatically.

The Westinghouse straight air brake and a powerful screw hand brake operate through cast-iron brake blocks on all four wheels. The air supply is maintained by a Reavell T.B.C.12 compressor. Sanding gear is of the gravity feed type with four sandboxes. This is provided mainly to assist braking as the torque converter enables extremely good adhesion to be obtained even under adverse rail conditions.

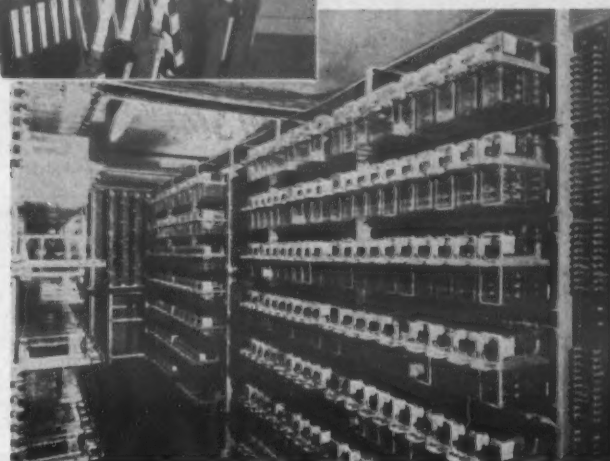
## RESIGNALLING AT DUMFRIES



CONTROL PANEL, DUMFRIES STATION

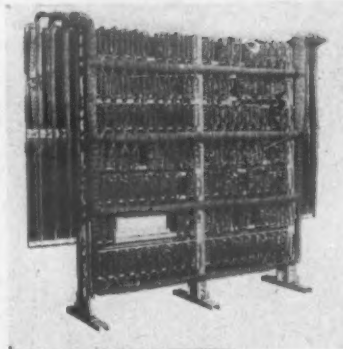
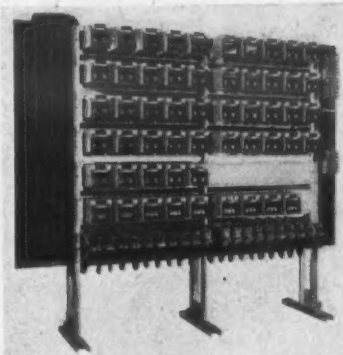
Photos by courtesy of British Railways, Scottish Region

RELAY ROOM, DUMFRIES STATION BOX



In this installation recently completed by the Scottish Region, an extensive programme of simplification and re-arrangement has been carried out, in which five signal boxes have been replaced by two.

Westinghouse plug-in type relays are installed, and the relay racks, as well as the control panel, were supplied completely prewired.



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Australia—McKenzie & Holland (Australia) Pty. Ltd., Melbourne

South Africa—Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg, Agents—Bellamy & Lambie, Johannesburg.

## Great Eastern Progress

### NEW STATION AT ENFIELD TOWN

FORMALLY opened by the Mayor of Enfield, Alderman E. L. Mackenzie, on April 25, the new Enfield Town Station replaces one built in 1849 when the Enfield Town branch of the Eastern Counties Railway was opened. Now, nearly 110 years later, the station is one of the heralds of the coming in 1960 of the electrified train service. The old station—adapted from the small country mansion in which the poet Keats was taught as a schoolboy—had changed but little over the years and has now been swept away and replaced by a building of modern lines. It has the most modern equipment available, including the

specially for the Eastern Region. The ladies' room, although smaller, is similar to that at Liverpool Street Station, which was subject to much favourable comment when it was opened. The usual station accommodation, stationmaster's office, parcels and inquiry office, bookstall, staff mess-room and so on is provided and conforms to modern standards. The station has been designed by the regional architect, Mr. H. H. Powell, working under the general supervision of Mr. A. K. Terris, chief civil engineer, Eastern Region.

Work, of course, continues on planning and reconstructing the line while still maintaining a



The front of the new Enfield Town Station and, right, the booking office



first Westinghouse-Garrard mechanical ticket issuing and accounting machines in use on the Great Eastern line.

The station is finished in a brownish red facing brick relieved on the rear side overlooking the platforms by panels of contrasting tiling; the roof is flat and of prefabricated timber construction. Good natural lighting is ensured by the use of dome lights projecting above the level of the flat roof and incorporating a device which gives permanent forced ventilation. The passenger accommodation is bright and modern, and the furniture is of the new standard pattern designed

service, and by 1960 Enfield residents will have a 10-min. service throughout the day and the journey time to Liverpool Street by fast electric train will be only 23 min. The opportunity afforded by the opening was used to exhibit some of the many items of equipment which are entering service on British Railways. They included one of the new miniature buffet cars, the open first- and second-class prototype coaches built by the Birmingham Railway Carriage and Wagon Co., Limited, one of the Brush 1,250-h.p. mixed-traffic diesel-electric locomotives now working on the Great Eastern Line, and freight equipment.

#### B.T.C. TRAFFIC RECEIPTS: PERIOD NO.4—1958

	Four Weeks to April 20, 1958			Aggregate for 16 Weeks		
	1958 (£ thousands)	1957	+ or -	1958 (£ thousands)	1957	+ or -
PASSENGERS						
British Railways	10,490	10,817	— 327	35,592	38,130	— 2,538
London Transport						
Railways	1,743	1,776	— 33	7,136	7,420	— 284
Road Services	4,370	4,607	— 237	17,534	18,517	— 983
Provincial and Scottish Buses	4,257	4,349	— 92	16,361	17,169	— 808
Ships	431	357	+ 74	1,096	965	+ 131
Total Passengers	21,291	21,906	— 615	77,719	82,201	— 4,482
FREIGHT, PARCELS AND MAILS						
British Railways						
Merchandise and livestock	7,114	8,269	— 1,155	30,087	36,489	— 6,402
Minerals	3,782	4,014	— 232	15,699	17,086	— 1,387
Coal and coke	9,857	9,285	+ 572	42,303	41,768	+ 535
Parcels, etc., by passenger train	3,918	3,911	+ 7	15,642	15,389	+ 253
Collection and delivery, etc.	946	1,039	— 93	3,852	4,279	— 427
Total Freight, British Railways	25,617	26,518	— 901	107,583	115,011	— 7,428
Others	4,023	4,226	— 203	16,451	16,748	— 297
Total Freight, Parcels and Mails	29,640	30,744	— 1,104	124,034	131,759	— 7,725
Aggregate	50,931	52,650	— 1,719	201,753	213,960	— 12,207

Comparisons are affected by the restrictions on oil supplies which operated from November 7, 1956, to May 14, 1957

## PICKFORDS HEAVY HAULAGE SERVICE

Abnormal Loads • Lifting

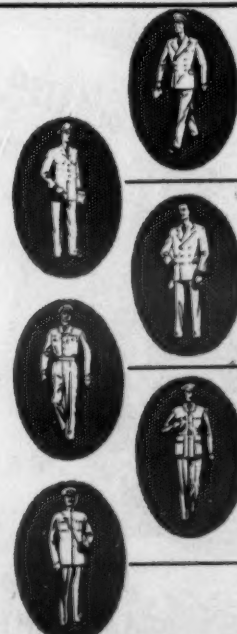
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And at: East Usk Road, Newport, Mon. Phone: Newport, Mon. 6268





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### CLASSIFIED ADVERTISEMENTS

**ACCEPTANCE.**—Advertisements can be accepted up to 2.30 p.m. on Monday to ensure insertion in the current week's issue. MODERN TRANSPORT is on Sale every Friday.

**FOR SALE**  
1953 and 1947 Diesel 3-ton Bedford Lorries (each with an A-licence) and goodwill of small general haulage business for sale at £1,500. Box No. 3790, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

**TRANSPORTER CARRIAGES**, ideally suited for heavy haulage, or modification to heavy load trailer.—Write F. C. Larkinson, Limited, 39 Hitchin Street, Biggleswade, Beds.

## FREE-PISTON ENGINE

### Possibilities for Road Vehicles

**P**OSSIBILITIES of the free-piston gasifier and turbine drive for road vehicles were explored in a paper presented by Dr. F. J. Wallace, group research engineer, Associated British Engineering, Limited, and Mr. B. C. Lovatt, technical director, Free Piston Engine Co., Limited, to a recent meeting of the London branch of the Institute of Road Transport Engineers. In a historical survey, the paper covered progress to date in France, the United States of America and Britain with existing free-piston gasifiers, which over a period of several years have already accumulated many thousands of hours' running in marine, rail-traction and industrial applications. The survey included reference to the automotive gasifiers under development by General Motors, Ford, Renault and the Free Piston Engine Company, none of which is yet in production.

According to the speaker, the most important work carried out to date in the United States was that by General Motors which, in collaboration with the French, had built a prototype automotive gasifier, the Hyprex—a two-cylinder unit of 4-in. diesel-cylinder bore developing 160 gas horsepower at 2,600 cycles per minute.

#### Basic Principles

As its name implies, the free-piston gas generator or gasifier is not in itself a source of mechanical power but a device for producing high-pressure high-temperature gas to drive a turbine. The gasifier is essentially a very highly supercharged two-stroke diesel engine, the supercharge of about 50 p.s.i.g. being provided by two reciprocating air compressors which are formed integrally with the combustion pistons.

Of the two possible configurations, the speaker considered that the inward compressing type possessed a number of outstanding advantages. In this type, the engine comprises two distinct sec-

tions—a diesel engine of two-stroke opposed-piston type, providing both the motive power for the compressor pistons integral with each diesel piston and the gas which constitutes the useful output of the machine; and the compressors at each end, providing the supercharged air to the combustion chamber. The term "free piston" derives from the fact that the pistons are not constrained by a conventional crankshaft and connecting rods, but are free to take up positions governed solely by the gas forces acting on the various parts of the piston assembly. It is still necessary to provide a mechanical linkage between the pistons and this is done by synchronising rods and a rack and pinion or similar mechanism.

The speaker saw basic advantages of the free-piston cycle over crankshaft-engine cycles in the high supercharge pressures, which gave compactness, high power-weight ratio and high thermal efficiency (the free-piston generator can utilise maximum pressures of the order of 2,000 p.s.i. compared with the commonly accepted limit of about 1,200 p.s.i. in crankshaft engines); and in the use of a turbine as the motive power unit, which possessed torque-speed characteristics well suited to traction applications without the use of multi-ratio gearboxes. Compared with the straight gas turbine, the gasifier in its present stage of development possessed a thermal efficiency well in excess of anything that could be visualised in the foreseeable future for even the regenerative type of gas turbine; thermal efficiency of the free-piston engine now approached that of the conventional diesel, the highest overall efficiency (that is fuel consumed to energy output at the turbine shaft) achieved so far was of the order of 36.5 per cent. Thus, the free-piston engine combined the high efficiency of the diesel engine with the desirable torque-speed characteristics of the turbine.

#### Turbine Characteristics

The authors outlined the characteristics of the inward-flow radial type of turbine, which they considered suitable for meeting even the most arduous operating conditions for commercial vehicles. The ratio starting torque—design torque at maximum vehicle speed approached 8 to 1 and turbine efficiency was about 35 per cent at 0.63 maximum vehicle speed under accelerating conditions, while under normal conditions it was limited to about 32 per cent. Bearing in mind the simplicity of the transmission without change-speed gearbox, this was considered very promising, particularly compared with figures of less than 20 per cent for a conventional gas turbine with heat exchanger.

Moreover, in the free-piston cycle, turbine inlet temperatures were low (450-480 deg. C.) and normal ferritic materials could be used for turbine construction, in which there would be no problem of harmful deposits. Troublesome acceleration delays inherent in the straight gas turbine were not a problem; in fact, the response of the free-piston gasifier to changes in throttle setting were almost instantaneous.

Overall dimensions of a 195-g.h.p. free-piston gasifier were given as 50 in. long, 20 in. high and 18 in. wide, and specific weight of a complete unit comprising gasifier, control gear, turbine and turbine reduction gear as 12 lb. per shaft horsepower, of which rather more than two-thirds was accounted for by the gasifier. This gave a weight for the gasifier only of 1,280 lb. compared to a dry weight of 1,400-1,600 lb. for a conventional 150-b.h.p. diesel engine. The weight of a suitable turbine of about 5-in. rotor diameter, given as approximately 300 lb., also compared favourably with conventional transmission arrangements. Since the gasifier and turbine were mechanically independent of each other, installation in a vehicle could be arranged in practically any way that was convenient.

#### Starting and Controls

Starting the gasifier was most conveniently effected by compressed air admitted to both cushion (compressor) cylinders, which would necessitate provision of an electrically driven auxiliary compressor. The only control directly operated by the driver was the fuel pump rack. All other gasifier controls, which included a cushion control to adjust the amount of air trapped in the cushion cylinders at each stroke to give correct diesel compression pressure irrespective of load and a fuel-injection timing control operated by a cushion-pressure sensing device, were fully automatic. Auxiliaries would include a cooling fan driven by a small separate exhaust turbine, coolant and lubricating-oil pumps driven, with the fuel-injection pump, by the pinion rocker shaft; compressor for starting and braking systems; and an electrical generator driven either from the transmission or an auxiliary turbine.

In common with other gasifiers, the authors said, the automotive unit would operate satisfactorily on a wide range of fuels from 100-octane petrol downwards—even to heavy residual fuels of 2,000-3,000 sec. viscosity if preheating-pretreatment equipment was used, though this was probably only of academic interest. But the ability to burn the entire range of distillate fuels and some of the lighter non-distillates was a very real advantage.

Summarising, the free-piston gasifier was a very attractive power unit from many points of view. It was already firmly established as a serious rival of the diesel engine and straight gas turbine in the 1,000-10,000 h.p. range and in sizes suitable for road transport vehicles, it still retained considerable advantages. A number of problems remained to be solved but the authors ventured to forecast that the development effort required to produce a fully roadworthy free-piston unit would be very much less than for the straight gas turbine.

Two of the newest engines produced by F. Perkins, Limited—the 1.6-litre Four 99 and the P4 192—were shown in Germany for the first time at the German Industries Fair, Hanover, from April 27 to May 6.

The Midland area eliminating competition of the National Road Passenger Transport Ambulance Association, the award for which is the Stirk trophy, will be held in Assembly Hall of West Bromwich Grammar School at 2 p.m. on Sunday, May 11, on the auspices of the West Bromwich Corporation Transport Committee, the chairman of which is Alderman G. C. W. Jones.



**Taking the load off the driver**



The C.A.V. Automatic Electrical Gear Change Equipment enables a driver to concentrate on his job—safe control of the vehicle. It relieves him of all gear-changing operations, which for a public service vehicle on a busy route may number 4,000 per day. Gear changes are effected strictly in accordance with road speed and engine torque, so that driving is by accelerator and brake only. It makes the driver's job easier and reduces wear and tear on the vehicle. Neutral is automatically selected as the vehicle slows to a stop, and reverse cannot be selected accidentally. An overriding control permits the manual selection of gears if and when required. This equipment is applicable to vehicles with direct-acting epicyclic gear-boxes, using either pneumatic or electro-hydraulic operation.

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## ROAD VEHICLE INDUSTRY

### Novel Inspection Lamp

DESIGNED initially to provide light for the satisfactory inspection of the interiors of barrels and containers having a small aperture, a patented inspection lamp developed by Victor Blagden and Co., Limited, Plantation House, Mincing Lane, London, E.C.3, should find many uses in all branches of the transport industry where inspection is necessary in restricted spaces. Named Barrelite, the new lamp comprises a flexible plastics stem about 2 ft. 3 in. long and 1/2 in. in diameter, with a rubber hand grip at one end and a

sion to be used for this purpose; by this means, rotation in either direction can be selected. Provision is made for electromagnetic speedometer drive, a final spur gear permitting a simple means of adjustment of ratio to suit any application.

#### Notek Beamchecker

COMPULSORY vehicle tests for older vehicles soon to be introduced will call for inexpensive and efficient equipment to enable the tests to be carried out economically. A piece of



Close inspection of inaccessible vehicle parts is made easy with the fluorescent Barrelite; right, the inspection lamp complete with choke wound for mains voltage

9 in. long by 1-in. dia. clear plastics fluorescent-tube holder at the other. The tube holder is threaded on to the main stem and the lead, which passes through the hollow stem, terminates in a choke wound for mains voltage. The tube is rated at 7 watts at 90 volts and the choke and a switch are housed in a small steel casing suitable for attachment to a wall or pillar. The lamp provides a penetrating white light and as it generates practically no heat and is entirely non-metallic externally, fire risk is eliminated. In construction the Barrelite appears practically indestructible, light in weight and well balanced and the small diameter of the light source and the stem enables it to be passed through narrow openings and leaves space to obtain a proper view when the lamp is inserted into a small aperture. The price complete with choke is 87s. 6d. and replacement tubes cost 14s. 6d. post free in the United Kingdom.

#### D.B. High Torque Gearbox

FOR vehicles with gross weight of 40 tons and over, the automobile gearbox division of David Brown Industries, Limited, has introduced a unit designed for a maximum input torque

equipment that appears to meet one of these needs is a new device for checking the aim of vehicle lamps recently introduced by Notek Electric Co., Limited, Bromley, Kent. The Beamchecker, as it is named, is claimed to be effective for checking all types of front lamps and operable by any employee in a few minutes. It is based on a design of and approved by the Road Research Laboratory, is light and easily portable and costs £7 14s. ex works.

#### B.M.C.—Approved Accessories

SUITABILITY of the many accessories now available for any particular vehicle is often a matter for doubt and to assist users of its cars and commercial vehicles in the selection of entirely suitable items, the British Motor Corporation has produced two books. One of these illustrates and describes the wide range of accessories approved by the corporation and the other gives the part number, description and price of each accessory approved for every vehicle in the B.M.C. range; it includes over 600 items. All approved accessories are available from B.M.C. Service, Limited, through distributors and dealers.

#### Large-Capacity Karrier Refuse Collector

FURTHER widening of the range of Karrier municipal vehicles is announced with the introduction of the Dual-Tip Senior—a 25 cu. yd. refuse collector. Built on the Karrier 7-ton forward-control chassis, which can be powered by either a 111-b.h.p. underfloor petrol engine or the Rootes 105-b.h.p. two-stroke diesel engine, the Dual-Tip Senior embodies a steel four-door seven-seat cab as standard. The body follows the design of the established 18 cu. yd. collector and a bin-lifting attachment for handling large containers is available.

#### Built-In Coach-Washing Sprayer

USEFUL for maintaining exterior cleanliness of passenger vehicles, particularly coaches on extended tours, is a built-in water-spray installation seen on a coach at the recent British Coach Rally. The vehicle was a Plaxton-bodied 36-seat Leyland Tiger Cub, one of 16 similar now being delivered to James Smith and Co. (Wigan), Limited, which won for the operator the Arlington Trophy in the concours d'elegance. The arrangement comprises two L-shaped perforated metal pipes, one fitted along one side and the front of the roof and one along the other side and back. Water or a water-detergent mixture fed into the built-in pipes provides an all-round spray enabling one man with a long-handled brush to wash the vehicle in very little time.

#### Automatic Fast Charger

SAFE fast battery charging is claimed with a new machine developed by Partridge, Wilson and Co., Limited, Leicester. Named Davenet automatic starter-charger, the equipment incorporates a constant-voltage electromechanical device similar to the voltage regulator in normal



Permanently fitted perforated pipes facilitate washing Plaxton-bodied Leyland Tiger Cubs operated by Smith's Tours (Wigan), of which the one pictured won the Arlington Trophy in the concours at the recent British Coach Rally

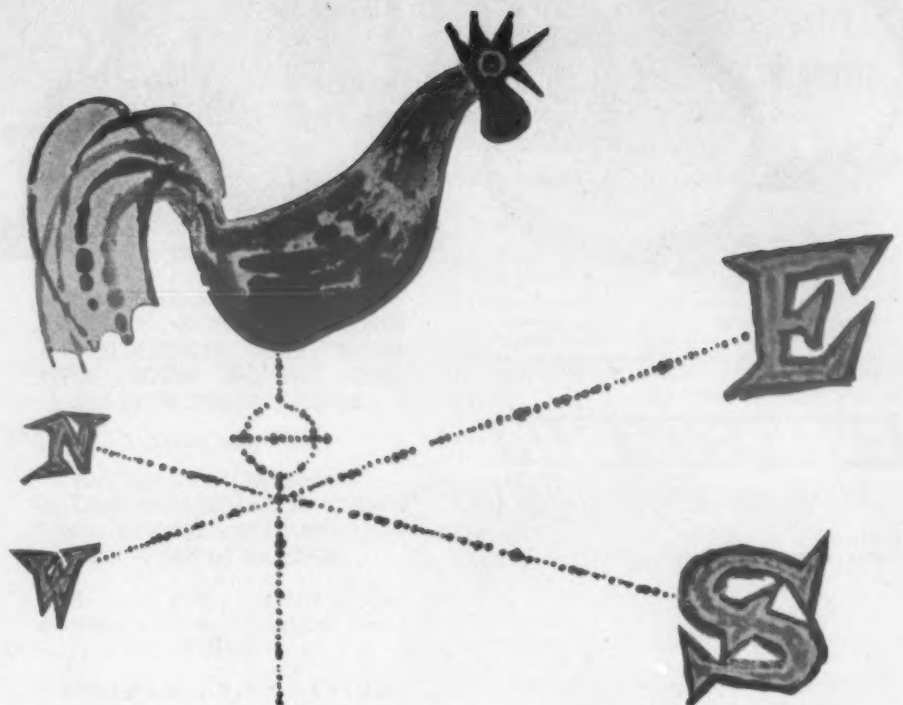
of 650 lb./ft. It is available as a five-speed (model 561) or 10-speed (model 561A) unit, the latter being achieved by integral mounting of a two-speed



Pictured in front of the new Foden 28-ton capacity dump truck, which they saw demonstrated over Foden's rough track during a recent tour of Elworth Works, is a group of Warwickshire members of the Institute of Quarrying

epicyclic train. The unit is designed for left-hand drive and supplied complete with forward-control mechanism, but it can be made suitable for right-hand drive merely by mounting in the inverted position. All the gears are in constant mesh and single helical gears are used for all forward speeds. The reverse train employs spur gears. A full power take-off is provided when required and special clutch arrangements enable the reverse shaft exten-

vehicle charging systems, which applies a high initial current to a discharged battery that reduces as the battery state improves, eventually to a trickle when the battery is fully charged. A brochure is available describing the equipment, which can be used to provide normal charging and engine starting facilities as well as safe fast charging at up to 80 amp. at 6 volts and 50 amp. at 12 volts.



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## SHORT SEA ROUTE PORTS

### 4—Dover\*

By HENRY REES, M.Sc. (Econ.), Ph.D.

ALONE of all the Channel ports, Dover has been used almost continuously from Roman times till the 20th century. It has, indeed, a remarkable situation. The bold chalk cliffs where the North Downs thrust themselves into the sea are only 22 miles distant from the Continent of Europe, and throughout history Dover has been the most favoured embarking and landing point for travellers to and from the mainland.

A small river, the Dour, has cut a deep gash in the surface of the chalk, forming the only break in the line of cliffs. The mouth of the little stream in early days was navigable, and about 200 yards inland, on its western bank, the Romans established a military or naval base. So began Dover, and the market place—the very centre of the modern town—falls largely within the site of the old Roman camp. The harbour, framed on either side by lofty cliffs rising to 350 ft., was and still is an unmistakable objective for vessels crossing the narrow strait. With characteristic ingenuity the Romans constructed two lighthouses, one on each height, and the easterly structure can still be seen, an impressive ruin, four storeys high. The modern lights of Dover harbour are their direct successors.

Soon a military road had been laid out, first in a straight line north-west to the lowest crossing of the Stour (Canterbury), thence west-north-west to the lowest crossing of the Thames (London). From London the Roman roads fanned out to reach all parts of Britain: it was an effective system, and we have hardly improved upon it today. But the Dover road has now become in addition the road to the pleasure beaches of North Kent and to the paper mills of Sittingbourne, and it has long been overburdened with traffic. The belated Medway Towns by-pass (whose imminent construction was announced last November) should relieve congestion; but at present the motorist speeding along A2 (or perhaps trapped in a jam at Rochester Bridge) still has the Romans to thank for the line of his journey.

#### Role as a Cinque Port

Dover was already a thousand years old when William the Conqueror landed near Hastings; and it became a prominent member—perhaps the leading member—of the confederation of the Cinque Ports. It is significant that the Domesday Book

during the early years of the 20th century it was lengthened to 4,000 ft., and the Eastern Arm (3,320 ft. long) and the South Breakwater (4,200 ft.) were added, constructed of blocks of concrete on a foundation of solid chalk. In all three miles of piers were built, enclosing a harbour of 610 acres.

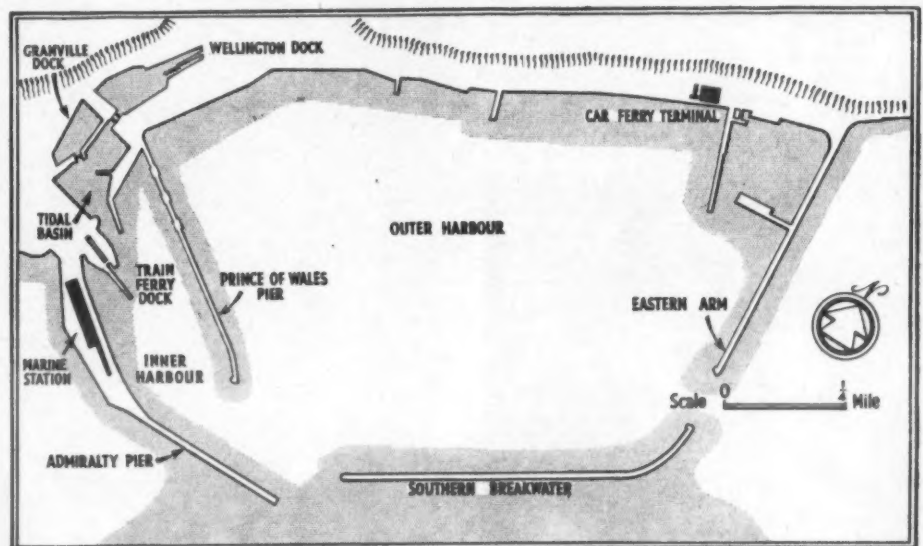
#### Commercial Development

This was completed in 1909; but by 1929 the scheme for a naval base had been abandoned, and the Harbour Board found itself in possession of a ready-made commercial harbour. This it has developed with energy and foresight, so that Dover is now the leading passenger port in the United Kingdom, as the following table shows:

Port	Passengers handled (in thousands)	
	1955	1956
Dover	1,725	1,791
Holyhead	770	850
Southampton	707	647
Harwich	607	609
Folkestone	526	564
Liverpool	439	469
Newhaven	432	365
Fishguard	234	257
London	216	211
Weymouth	143	135
Tyne ports	117	127

Three distinct strands combine in the cross-Channel traffic of Dover: there are the normal passenger services, the train ferry and the car ferry. The passenger steamers use the Admiralty Pier, whose base was widened to accommodate a new station (Dover Marine); where arrive the trains from Victoria, timed to link with departing and arriving vessels. Normally they complete the journey in 95 min. Five channel steamers can berth at the Admiralty Pier simultaneously, and if necessary there are additional berths along the Prince of Wales Pier on the far side of the harbour entrance.

The train ferry operates from its own dock, situated between the Admiralty Pier and the entrance to the Inner Harbour, and provides through services between London and Paris and London and Brussels via Dunkirk. The traveller enters his sleeping-car at Victoria Station and he need not leave it until the train has arrived in Paris or Brussels the next morning. Meanwhile the ferryboat has entered the dock at Dover



Plan of Dover Harbour showing the piers and docks handling traffic

opens with an account of Dover, for its fortunes were not only of local but of national concern. That survey records that, in the time of Edward the Confessor, Dover "gave the King 20 ships once a year for 15 days, and in each ship were 20 men. This they did in return for his having endowed them with sac and soc" (i.e., independent jurisdiction and free courts). Subsidiary ports contributed to Dover's quota of ships; no other head port had so many "limbs," and among the nine members of Dover were places as far afield as Faversham and Margate. About 1180 the Normans built the massive keep of Dover Castle and this by its protection must have aided the growth of the port. The town itself was walled during the 14th century against the French; but by the end of the century the river mouth was becoming choked with shingle; and from this time onwards there is a long story of constant struggle against south-westerly gales and the piling up of eastward drifting beach material.

The modern port bears no resemblance to that of the middle ages. At the end of the 14th century the first pier was built, enclosing what was for a while a sheltered harbour. Yet by 1530 the pier was badly damaged and the river mouth again choked. Today the sites of both pier and harbour lie among the streets and houses to the west of the Marine Station. During the 16th and 17th centuries reservoirs were enclosed near the river mouth in an attempt to clear the harbour: their water would be released suddenly in the hope that the increased scour would breach the shingle barriers. The scheme does not seem to have been a great success; but these reservoirs paved the way for the construction in the 19th century of the two enclosed basins of the port—the Wellington and Gramville Docks. Meanwhile the line of the London, Chatham and Dover Railway had reached Dover (1861) and its future as a passenger port was assured. For long the docks acted as the cross-Channel terminus, and even today the packet steamers are repaired or laid up in Wellington Dock. Both docks handle the general trade of the port, receiving in particular grain, coal, stone, timber (including pitprops), woodpulp and building sand and gravel. Continental cargoes, however, are loaded and discharged at the modern piers.

The westward drift has at last been conquered, but only through the construction of a system of piers and breakwaters which have transformed the haven into one of the largest artificial harbours in the world. In 1898 the government decided to convert the port into a naval base. The Admiralty Pier had already been built for a generation;

through lock gates; water has been pumped in or out to bring the vessel to the same level as the railway track on the shore; the link span has been completed and the carriages hauled aboard in two lines, while up to 30 cars have been driven on to the upper deck. This is normally a night service, and for those who wish, there are comfortable lounges and restaurants on the ship. During the day the train ferry carries goods wagons both ways and cars for export. About 350,000 tons of cargo are handled annually in this way: wines and fruit, flowers, vegetables and general cargoes travel inwards, while machinery, woollens and other goods travel outwards.

#### Cars and Cargo

The car ferry operates from the Eastern Docks, where two lofty portals may be seen in the angle between the Eastern Arm and the shore. The terminal dates only from 1953 and was described in MODERN TRANSPORT of April 11 of that year. Six vessels now operate the car ferry services, linking Dover with Calais, Boulogne and Ostend. A fine new ferry, the *Compiègne* has been ordered by French Railways and is to enter the Dover-Calais service in May, while a second new ship, ordered by the Belgian Government Marine, is expected to enter the Dover-Ostend service in June, in time to handle traffic to the great exhibition in Brussels. *Compiègne* will accommodate 1,000 passengers and 160 vehicles (including space for extra large coaches); Denny-Brown stabilisers will make for a comfortable crossing even in stormy seas.

Dover has a considerable cargo trade, but remains first and foremost a passenger port. Since the war there has been a remarkable expansion of the car ferry traffic, aided more recently by the opening of the new terminal. In 1939 31,000 accompanied cars were ferried to the Continent; by 1950 the number had grown to 70,000 and by 1956 to 190,000. But expansion has also taken place in the whole of the passenger traffic. The prewar volume was exceeded in 1952, and since then each succeeding year has shown a substantial increase. In 1956, 1,786,000 passengers used the port; and the white cliffs still provide a welcome, as they have done since Roman times, to those who cross the narrow seas.

The name of Hartcliffe, Lee and Malkin, Limited, has been changed to Hartcliffe Chains, Limited, a division of Borg-Warner, Limited. The address remains Steel Chain Works, St. Simon Street, Salford, 3, Manchester. Telephone: Blackfriars 1534.

## TWO NEW VESSELS

(M.V. Container Enterprise & M.V. Container Venturer) for the

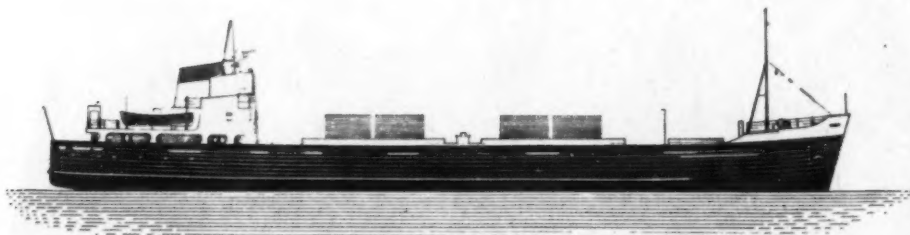
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BRITISH RAILWAYS

PIONEERS IN LARGE SCALE CROSS CHANNEL CONTAINER TRANSPORT

\*No. 3 appeared March 29.



# CONFECTIONERY DISPATCH

Unit Loading for Fast Turnover

## PALLETISED INTER-FACTORY TRANSPORT

USING smaller types of fork-lift trucks, supplemented by hand elevating trucks, Callard and Bowser, Limited, utilises the whole stockroom floor space at its Hayes, Middlesex, confectionery factory. There are no aisles in the sense associated with palletised storage; despite this, it is possible to dispatch stocks of the various lines of confectionery in accordance with date of manufacture. Moreover, the Hayes factory is the centre from which distribution of Callard and Bowser and associated products is effected throughout a wide area of England and to it are

these unit loads, which range from 1,000 to 1,500 lb., it is possible to draw out stillages, taking advantage of broken lines, without resorting to formal aisles.

A ticket is prepared for each van journey, indicating the quantities of each product requisitioned. Armed with this, the warehouseman draws out complete stillages where called for, or takes an empty stillage to perambulate the storage lines, making up a composite load in smaller quantities. Stillages are deposited at floor level at any one of the six dispatch points to await loading. Each



A section of the stockroom at the Callard and Bowser Hayes factory illustrates use made of floor space; right, inside one of the enclosed dispatch bays loading small lots into a van

sent, palletised in transit, the products of works at Park Royal and Doncaster.

### Production

The Hayes factory was acquired some four years ago. It makes toffees in various varieties, including treacle toffee, and fudge. Park Royal specialises in what are known in the confectionery world as "boilings"; these include butterscotch, nougat, noyau, together with a relatively new delicacy identified by the name treacle brittle; Doncaster produces wrapped mint sweets, and a Halifax subsidiary bon-bons and more toffees. There is thus a familiar pattern of inter-factory transport necessary to provide national distribu-

tion. The products are made up in packs, cartons or tins containing from 3 lb. to 7 lb. Loaded directly on to stillages from the production lines the Hayes goods are taken off by hand elevating truck to the adjacent stockroom, which provides about 9,000 sq. ft. of storage space, sufficient without double stacking for perhaps 250 tons of confectionery. In the course of a week it dispatches about 150 tons (say 60,000 packages), including the products of other factories, the peak day being Monday, when the entire fleet of 18 distribution vehicles is normally loaded away on journeys which will occupy from one to five days. On this day about 50-60 tons is sent out.

There are about 600 timber-floored 30 in. by 40 in. steel-framed four-way stillages available at Hayes for domestic use and inter-factory movements; in addition there are about 200 double-



The Albion Chieftain side-loading stillage van unloading after arrival from Park Royal, and, right, the 10-ton Reiver being loaded away by Wrigley fork-lift truck

also about a dozen Atlas hand elevating trucks, manufacturer A. Andreassen and Co., Limited, Hounslow.

There is storage capacity in each dispatch bay for upwards of 5 tons. Loading is by hand truck over a hinged flap let down on to the vehicle floor. The 18-vehicle distribution fleet already referred to is with two exceptions of Albion make and includes light Claymore underfloor-engined 4-tonners. The vans are racked from floor to roof on the outside of a central gangway to accommodate goods in small quantities, the bulk lots being stored on the nearside. Deliveries to wholesalers and larger retailers range from 56 lb. upwards.

### Stillage Vans

Stock for the home market is ferried from Park Royal to Hayes in an Albion Chieftain 6-tonner

with Duramin light-alloy pallet van body. This is divided by means of light-alloy partitions into 12 compartments to which access is gained from outside, the sides being enclosed during transport by roller shutters and hinged panels. The vehicle normally makes three trips daily and is loaded and unloaded by fork-lift truck. In certain instances unit loads are secured by means of a light-alloy cage.

An Albion Reiver 10-ton van, again with Duramin bodywork, but this time arranged for conventional end loading, runs on a circuit Hayes—Edinburgh—Doncaster—Hayes, carrying confectionery from London to Edinburgh, returned empties from Edinburgh back to Doncaster and mint sweets from Doncaster to Hayes. The body is 8 ft. wide and is capable of accepting 21 of the standard stillages in three rows of seven. Stillages are manoeuvred within the van by means of hand truck placed by fork-lift truck. Sufficient stillages are maintained in circuit at Edinburgh and Doncaster to meet the movements of this vehicle. Loading time is estimated to be only 30 min.



One of the Albion Claymore 4-ton delivery vans backed into a loading doorway

faced two-way timber pallets available when stacking is necessary at peak production periods. The 30 by 40 dimension was selected for its ability to receive any of the products without overlapping, which would damage cardboard cartons, create excessive voids during transport.

Confectionery is stored in the stockroom in transverse rows, using the long wall opposite the dispatch bays as a headwall and leaving a circulating corridor immediately behind the dispatch front. Each product is allocated one or more adjacent lines—some, fudge in particular, require a period in which to harden to the requisite state for dispatch. As already indicated, double stacking is normally unnecessary.

Packages forming each unit load bear a code letter denoting the date of manufacture and the rows are broken down on a first-in-first-out system, stillages being withdrawn or "milked" from the head of the row while fresh stock is added at the tail or a second line commenced. When a line has dwindled it can be relocated piecemeal against the headwall. By using small hand trucks for



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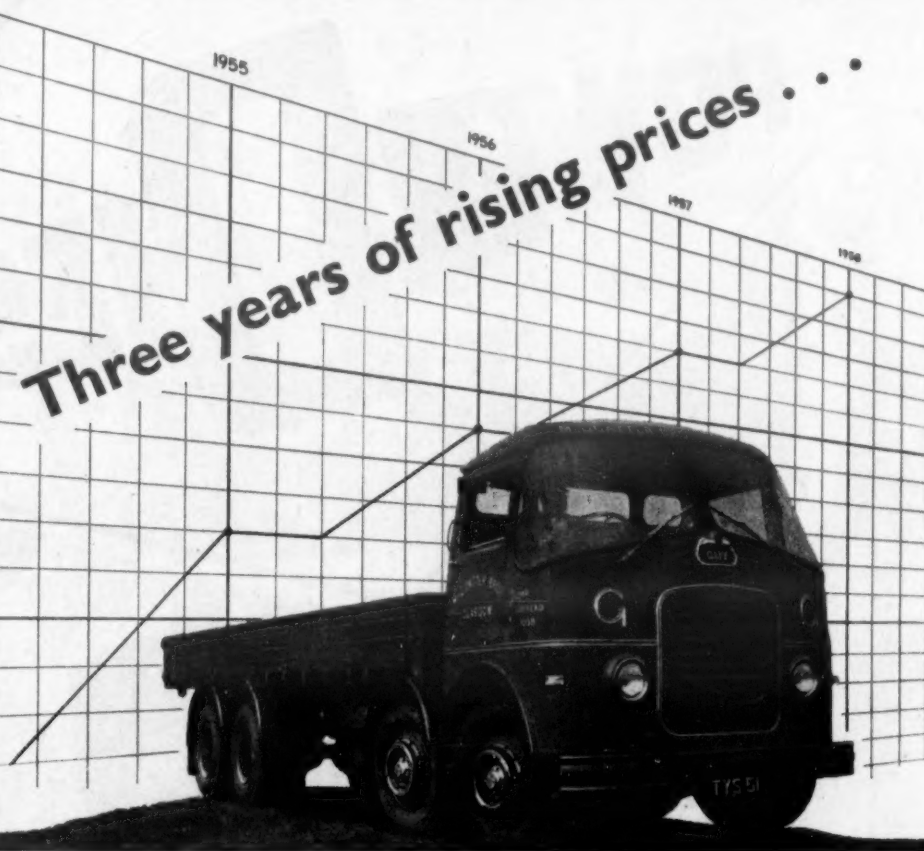


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## One-Man Bus Economics

(Continued from page 3)

buses in days of yore. In such circumstances the task is that much easier, but it is essential to bring home to the men that they are providing a much more personal service than in the days when they were separated from the passengers and, indeed, their mate on the back by a window and a bulkhead. The ideal, of course, is reached when, with experience, they come to know passengers at least by face, if not by name. This is, moreover, quite practicable on the type of rural route for which one-man buses are particularly suited. In general the driver-conductor enjoys his new-found contact with the customers, especially on rural routes.

Another vital factor is that the driver must feel at ease when at work. Here a great deal of trouble has been taken by all operators to achieve this with the installation of ticket machines, public address equipment, air- or electrically-operated doors and, in some cases, change machines. The last-named are not as generally agreed as the rest and some operators do not anticipate providing them, particularly as installation in cabs to meet requirements of certifying officers can tend to hamper the access of passengers to the driver. The easier the method of ticket issue the happier the driver and we describe below the Almex ticket machine which has been used by Maidstone and District in a number of its buses with considerable success.

## Almex Machine

Special features incorporated in the Swedish Almex ticket printing and issuing machine, distributed in the United Kingdom by A. Johnson and Co. (London), Limited, Africa House, Kingsway, W.C.2, give it an unusual interest to the bus industry at the present time. A salient feature is the continuous audit roll, a record of each cash transaction stored in the machine. This offers the following advantages: it provides a permanent source from which traffic statistics may be extracted; attempts at irregular operation are clearly shown on the audit strip; shorts and overs, on the other hand, can be tracked down to their source in many cases by reference to the strip (for example, by comparing fare values with fare stages); loadings from any stage can easily be extracted or a complete picture be compiled of the loading pattern on rural routes—an especially important factor at this time. The Almex is, in fact, a valuable

adjunct to operation of high-capacity one-man single-deckers.

## Continental Experience

The U.K. distributor has had the advantage of practical experience of the machine over a period of some years since its Swedish parent organisation includes among its interests the Linjebuss concern, which uses the Almex on its interurban bus routes. It is estimated that there are at least 2,000 in service with the Swedish State Railways bus system and large numbers also on the Danish State Railways vehicles, in Norway, France, Belgium, Western Germany, Switzerland and Italy.

In this country the B.E.T. group has over 50 in service; Maidstone and District Motor Services, Limited, assisted in the evolution of a model suited to British requirements. Now experiments are being extended to two companies in the Tilling Group, the United Counties Omnibus Co., Limited, and the Eastern Counties Omnibus Co., Limited. United Counties has commenced trials with the first Almex machine here operated by a conductor as personal equipment.

## Controls

Installed in one-man single-deckers, the machine occupies about 31 sq. in. of space; it weighs about 4 lb. A series of (normally) five key banks is used to indicate boarding fare stage number, fare in shillings, pence and halfpence, and fare classification (single, return, child's, or parcel ticket, etc.). The standard Almex prints fares up to 9s. 11½d., but with an additional bank issues up to 99s. 11½d. become possible. On the left as the driver sees it is a two-digit finger wheel, giving numbers 01 to 99 to indicate either the bus running number, the trip number or the boarding stage number. Four counters visible on the right-hand side register halfpence, pence, shillings and total number of tickets sold. Total value is obtained by summation of the differences between starting and finishing numbers on the money counters.

Date wheels indicating date, month and year, are readily changed, being accessible through a door in the left side. This door also provides access to the ticket and audit rolls and a locking device. The operating lever, with a starting key as a safety measure, is on the right. Although the operator has access to the audit strip it is impossible for him to make any alterations to it without detection.

## Return and Season Tickets

The model adopted by Maidstone and District is complete with a device capable of cancelling return tickets. This is done by inserting the ticket in a slot on the underside of the machine, depressing a button and operating the lever. The date and machine number then appear on the reverse of the ticket. By presenting a partially preprinted blank at a different angle to the slot it is possible to print a 12-journey or similar contract ticket, the full range of detail appearing if desired. A simple cancelling punch can also be attached for dealing with the latter class of ticket. The Eastern Counties Omnibus Co., Limited, is testing a model which will also issue normal single journey or return journey tickets, and alternatively weekly or period season tickets at will.

The Almex can be supplied with additional counters to record return tickets or other classifications, or to register fares where issues up to 99s. 11½d. come into question. If the two digits representing the last two figures of the year are not required by the operator this section of the date wheel assembly may be devoted instead to vehicle or journey identification. The issued ticket is roughly 1½ in. square and is guillotined, thus obviating the risk of mutilation with consequent loss of detail.

The standard Almex Minor with five key banks and four counters costs £100. If desired, a stand with built-in cash table and lock-up cash box can be supplied for an extra £28 15s. There are discounts for quantities. The standard model uses ticket rolls sufficient for 270-300 tickets (average cost 5½d.-6d. per thousand); the Major model, which costs an additional £6 18s., accepts larger rolls, sufficient for 1,100 tickets at a cost of about 4½d. per thousand. Audit rolls represent a cost of just over 1½d. a thousand tickets and will record approximately 1,500 issues. A coin changer may be added to the stand for £3 15s. It dispenses half-pennies, pennies, sixpences and florins.

Mr. L. J. Quilter, assistant traffic manager Eastern National Omnibus Co., Limited, has been appointed traffic manager, in succession to Mr. F. Bryan, who is retiring on May 31. Mr. Quilter entered the service of the City Coach Co., Limited, Brentwood, in 1946 as assistant to the general manager, subsequently becoming general manager in 1949. He became assistant traffic manager when the City company was acquired by Eastern National in 1952.

An arrangement has been made whereby Whiffen and Sons, Limited, and the Allot Water Treatment Service of Imperial Chemical Industries, Limited, will co-operate in the development in the United Kingdom of the use of Zerox for the de-oxygenation of boiler feed water. Deliveries of Zerox and technical advice on its use will be available from Whiffen and Sons, Fison House, 95 Wigmore Street, London, W.1, or from Allot Water Treatment Service, in the latter case, through I.C.I. sales offices.

## OFFICIAL NOTICE

## POTTERIES MOTOR TRACTION COMPANY, LIMITED

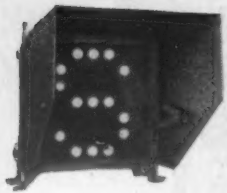
## VACANCY FOR GENERAL MANAGER

THE Potteries Motor Traction Co., Limited, invites applications for the appointment of General Manager of the Company in succession to Mr. C. W. Wroth, who will be retiring later in the year.

The Company, with headquarters at Stoke-on-Trent, operates some 500 vehicles, mainly on stage carriage services in North Staffordshire, and has also a considerable coach business and other ancillary operations.

Applications, which will be treated in strict confidence, should give full personal particulars including age and qualifications, and set out applicant's history and experience.

They should be addressed to Mr. R. W. Birch, Chairman, The Potteries Motor Traction Company, Limited, Stratton House, Piccadilly, London, W.1, to reach him not later than May 29, 1958.



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**CARDIFF**  
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Exchange Buildings  
SWANSEA 54171/5

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BRISTOL 33315

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## SOCIAL AND PERSONAL

### Death of Mr. W. P. Allen

WE greatly regret to record the death of Mr. W. P. Allen, C.B.E., M.Inst.T., manpower adviser on the general staff of the British Transport Commission. It will be recalled that his impending retirement on June 30 was announced three weeks ago; he was 69. Mr. Allen was formerly general secretary of the Associated Society of Locomotive Engineers and Firemen. He entered the railway service in 1907 as an engine cleaner at the Hornsey locomotive depot of the former Great Northern Railway. Six years later he was promoted to the grade of fireman; he became a driver in 1924. After having been for six years a member of the executive committee of the A.S.L.E. and F., and serving for three years as its president, he received in 1933 his first full-time appointment with that union as a district organiser. Three years later he was elected its assistant general secretary and was appointed general secretary in 1940, whereafter he was also a member of the general council of the Trades Union Congress, serving at various times as chairman of the workmen's compensation,



Mr. W. P. Allen

social insurance, organisation and disputes committees of the T.U.C. From 1929 to 1932 he was a member of the National Wages Board for Railways, and during the 1939-45 war served on the War Transport Council under the chairmanship of the Minister of War Transport. He was made a member of the Railway Executive upon its formation in 1947 and became chief establishment and staff, B.T.C., in the 1953 interim organisation. His appointment as manpower adviser, in which capacity he led wage discussions with the trade unions, dated from December, 1954. Mr. Allen was awarded the C.B.E. in 1947. Sir Brian Robertson, Chairman of the British Transport Commission, has paid the following tribute to Mr. Allen: "I am exceedingly sorry to hear of Bill Allen's death. His friends in this organisation came from every part of it and from every grade in it. It can well be said of him that he was a great trade unionist and a first-class management executive."

Mr. A. G. Smith, A.M.I.E.E., Dip. M.I.E.S., has been appointed manager of Benjamin Electric, Limited, engineering and research department. Mr. J. A. Studholme remains chief technical engineer.

Mr. G. E. Harris, the export sales director of Guy Motors, Limited, left England on May 6 to fly to Johannesburg on the first stage of a tour during which he will study operating and market conditions in South, East and Central Africa, and meet Guy distributors and operators.

Mr. S. C. Bond has been re-elected president and chairman of the national council of the T.R.T.A. for the fifth successive year and the four vice-chairmen were re-elected. They are Messrs. S. H. Jones (Scotland), C. E. Jordan (West Midlands), S. S. Robson (Northern), and K. C. Turner (East Midlands). The annual summer meeting of the T.R.T.A. Council is to be held at Scarborough on July 16.

Mr. T. W. Royle, who has been appointed district operating superintendent, Birmingham (W), London Midland Region, B.R., began his railway career on the former L.M.S.R. as a clerk at Boxmoor in 1935. In 1938 he became a traffic apprentice and on completion of his training in 1940 joined H.M. Forces in the Royal Engineers where he rose to the rank of major. After further railway experience Royle became assistant to district operating manager, Rotherham, in 1947, and in the following year assistant to district operating superintendent, Leeds. He was appointed assistant district operating superintendent, Burntisland, Scottish Region, in 1952 and he moved to a similar appointment at Leicester in August, 1954.



Mr. T. W. Royle

Mr. H. R. Featherstone, A.C.I.S., who has been appointed assistant secretary to the Traders Road Transport Association, took up duty on May 1.

We record with regret the death of Mr. E. H. Bliss, chairman of Pirelli, Limited. Mr. Bliss, who was 73, joined the board of Pirelli in 1946 and was appointed chairman in 1955.

Completion of a reorganisation of its tyre sales force has been effected by Pirelli, Limited. The divisional sales managers are now Mr. F. Briggs, Southern division, Mr. F. R. Dodgson, Midlands division, and Mr. A. B. M. Grant, Northern division. Mr. H. J. Goddard is London metropolitan district manager and Mr. S. B. Miners London provincial district manager.

We deeply regret to record the death, at the age of 70, of Colonel Sir Joseph Nall, Bart., D.S.O., chairman of Lancashire United Transport, Limited, immediately following his remarks at the annual general meeting of the company on Friday last week. (A portrait and obituary appear on page 11 of this issue; the funeral was arranged for Wednesday this week.)

### Lo.T. Congress in Dublin

DUBLIN is the venue for the congress of the Institute of Transport this year. It will be held from June 3 (assembly) to June 6, with headquarters at the Gresham Hotel. The programme will include papers by Mr. T. C. Courtney, chairman of Coras Iompair Eireann, on "Provision of Diesel-Electric Locomotive Power for C.I.E." and by General Sir Brian Robertson, chairman of the British Transport Commission, on "The Organisation of Transport," also visits to the C.I.E. garage and bus station at Store Street, Inchicore railway works and Collinstown Airport.

On Wednesday last week, Mr. G. O. Waters, O.B.E., retired from his post of chairman and managing director of Air Terminals, Limited, the company formed to operate the West London Air Terminal in Cromwell Road. Mr. Waters is relinquishing his post on medical advice after a prolonged period of ill-health. His duties as chairman will be taken over by Mr. A. C. Ping, a member of the B.E.A. board. Mr. Waters started



Mr. G. O. Waters

his career in civil aviation by joining Imperial Airways in 1929 after extensive experience in shipping. He was the first station superintendent of Croydon Airport, until 1934, when he became commercial assistant to Railway Air Services, in the formation of which he played an active part. After leaving Railway Air Services in 1938, he took up the appointment of general manager of Channel Island Airways, Jersey Airways, Limited, and Guernsey Airways, Limited, in 1939. During the war, Mr. Waters served with the Fleet Air Arm and became Deputy Superintendent of the R. N. aircraft repair yard at Donibristle, in Fifeshire, with the rank of Commander R.N.V.R. and also had a spell of service in 1943 as Air Transport Adviser to the Fifth Sea Lord of the Admiralty. He was released from the Navy in order to prepare for the revival of C.I. Airways in time for the rehabilitation of the islands; three days after their liberation Rapides of C.I. Airways reappeared loaded with necessities for the sorely-trying islanders. For these services Cdr. Waters received the O.B.E. and he became managing director of the three airways companies referred to above. When the services between England and the Channel Islands were taken over by British European Airways in 1947, Mr. Waters, who had joined B.E.A. on its formation the previous August as manager of its English Division, became in turn, manager British Division, general manager, British Services, and finally traffic director.

Mr. Roger W. Sewill, former director of the Road Haulage Association, left £22,052 (duty paid £3,129).

Tube Investments, Limited, announces that Mr. A. J. S. Aston and Mr. R. D. Young have been appointed to the board.

Mr. S. B. Hartshorne, A.M.I.Mech.E., M.S.A.E., has been appointed chief engineer of Henry Meadows, Limited, a firm he has served since 1935.

Mr. H. Geoghegan, A.C.I.S., has been appointed district goods manager, Bolton, London Midland Region, B.R. He joined the former L.N.E.R. in 1927 in Manchester. He served with the Royal Engineers (Movement Control) from 1940 to 1946 and was commissioned with the rank of captain. Mr. Geoghegan subsequently became headquarters claims prevention clerk at Liverpool Street, then special outdoor representative, commercial superintendent's office, Southern Region, Waterloo. In 1952, he became assistant goods agent, St. Pancras and Somers Town, four years later goods agent, Nottingham, and in 1957 assistant district commercial manager, Derby, which post he now vacates for his present position.



Mr. H. Geoghegan

Traditionally, the C.A.V. Western Area Agents' Conference held last week at Torquay was a pleasant blend of business and social activity. The intensive business sessions are reported elsewhere in this issue. The official reception of more than 250 delegates by Mr. H. G. Mason, director and joint general manager, C.A.V., Limited, was attended by the Mayor of Torquay, who delivered a message of welcome at the luncheon which followed. Welcoming the guests at dinner later in the day, Mr. Mason pointed to the benefits from the application of electronics in C.A.V. controls for a fully automatic bus transmission, which had been described during the afternoon by Dr. W. D. Sutherland, C.A.V. chief development engineer (electrical), and raised rueful laughter with a reminder that electronics was also responsible for erstwhile passengers sitting at home "watching the empty buses go by on TV." The esteem in which Mr. T. L. C. Strange, general manager, Devon General Omnibus and Touring Co., Limited, is held by his former Rhondda colleagues was evident when, on rising to reply for the guests, he was greeted by their spiritedly singing "There'll be a welcome in the valley," which both he and more than 300 other diners found extremely moving.

## THE HARRINGTON 41 SEATER



Individual seats for 41 passengers are now provided as standard equipment.

Gangway side and centre folding armrests can easily be provided if required.

Forced ventilation is provided as standard equipment and in all respects quality coachwork and modern design are incorporated in this vehicle.



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## the up-to-date LOWBRIDGE "double-decker"

The Dennis LOLINE Double Deck Bus Chassis is an outstanding achievement of up to date design and engineering, giving a combination of the height of a low bridge double decker with the operational convenience of a normal height vehicle. It has, too, central gangways in both upper and lower saloons allowing for speedier flow of passengers.

Unusual features of the design contribute to the saving in height, an exceptionally low slung chassis having a transmission line offset so as to offer a much lower than usual central gangway in the lower saloon and the dispensation of the step between the rear platform and saloon.

A unique design of the rear axle with a down arched central beam gives the necessary clearance for the low level gangway.

Powered by a Gardner 6LW Oil Engine and fitted with a Dennis five speed gearbox, its ability to operate at low cost and increased passenger comfort, the Dennis Loline is indeed the up to date trend in double deck design.

An illustrated brochure giving full details will be sent free on request.

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**DENNIS  
LOLINE P.S.V. CHASSIS**  
DENNIS BROS LTD  
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## IMPORTANT CONTRACTS

## Bedfords Again for India

**D**IFFICULT to obtain in India since the Indian Government imposed restrictions on their assembly in 1953, Bedford commercial vehicles will shortly be freely available in India again. Under the terms of an agreement with General Motors, Hindustan Motors, Limited, is to assemble Bedford lorries in Calcutta. An initial licence has been granted for the import of 600 vehicles, which will be shipped in c.k.d. form from England before the end of July. It is expected that import licences for further vehicles will be issued later.

## Quicktho Windows for Ceylon

Quicktho Engineering, Limited, has secured a substantial contract for bus window units for the Ceylon Transport Board. In addition to this direct contract, Quicktho windows are also being fitted to bodies being built in this country for the board.

## Helicopters To South America

A further order for Westland helicopters placed with Westland Aircraft, Limited, is for two Whirlwinds for the Cuban Air Force. The medium size of a range of three helicopters produced at the Yeovil factory, the Whirlwind carries eight passengers or a freight load of 1 ton.

## Brussels Exhibition Trailer Buses

The 20 open-sided single-deck road trains, comprising Mercedes O319 buses and four-wheeled trailers with seats for 60 passengers, produced in Belgium for carrying visitors into and around the exhibition grounds are proving so successful that a further 20 sets have been ordered.

## Dundee Tram Track Removal

Dundee Corporation has awarded a contract for the removal of disused tram tracks from about two miles of Perth Street to William Briggs and Sons, Dundee. The firm's tender for lifting the tracks and remarking the road was the lowest of eight received. The work is expected to take about a year to complete.

## Coroplast For Iraq

Holoplast, Limited, has received an order from Iraq for 8,000 sheets of Coroplast laminated plastics roofing material, worth £26,000. Most of the material, which has been chosen for its resistance to corrosive fumes and severe temperature differentials, will go to Iraqi State Railways and the remainder to the Public Works Department for roofing and side-cladding essential buildings.

## North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:

J. Rhodes and Son, Limited, Wakefield, for one Rhodes patent fluid driven shears,  
Tangyes, Limited, Birmingham, for one 200-ton bending and straightening machine.  
Coventry Climax Engines, Limited, Coventry, for two diesel fork-lift trucks for Shildon.  
Ormerod Shapers, Limited, Hebden Bridge, for one 14-in. slotting machine for Darlington Faverdale works.  
Kendall and Gent, Limited, Manchester, for one single-head screwing machine for Darlington Faverdale works.  
Drummond-Asquith (Sales), Limited, Birmingham, for a radial drilling machine for Darlington locomotive works.  
Westinghouse Brake and Signal Co., Limited, London, for colour-light signalling at Pelaw Station.  
B.K.S. Air Survey, Limited, Leatherhead, for aerial surveys at Newport, York and Selby.

## TENDERS INVITED

**T**HE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

**May 14—Australia.**—Victorian Railways for 200 single-lens searchlight-type COLOUR-LIGHT SIGNAL OPERATING MECHANISMS; 75 DEFLECTING COVER GLASSES for 20-deg. spread; and 36 GLASS BASES for mechanisms. Tenders to the Secretary, Victorian Railways, Railways Administration Offices, Melbourne, C.T. (ESB/11008/58.)

**May 16—Greece.**—State Procurement Committee for 10 four-wheel-drive (Jeep-type) UTILITY VEHICLES. Tenders to the State Procurement Service, 56 Panepistimiou Street, 3rd Floor, Athens. (ESB/11079/58.)

**May 19—Spain.**—International Co-operation Administration for about £100,000 worth of railway POINTS and CROSSINGS MATERIALS. Photocopies of tender documents from Export Services Branch, B.O.T., price 17s. (ESB/11613/58/ICA.)

**May 27—India.**—Bombay Electric Supply and Transport Undertaking for 72 heavy-duty diesel BUS CHASSIS suitable for double-deck rear-entrance 28-ft. 68-70 seat bodies and alternatively for chassis suitable for 30-ft. 74-76 seat double-deck bodies. Tenders to the General Manager, the Bombay Electric Supply and Transport Undertaking, Post Box 192, Bombay, No. 1. (ESB/11016/58.)

**June 1—Iraq.**—Post and Telegraphs Department for four 4-ton (or more) capacity FOUR-WHEEL-DRIVE VEHICLES. Photocopies of tender documents from Export Services Branch, B.O.T., price 3s. (ESB/11015/58.)

## FINANCIAL RESULTS

**N**OTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

## West Riding Automobile

Net profit of the West Riding Automobile Co., Limited, after tax and depreciation was £43,395 (£54,394) for the year 1957. Dividend is 12 per cent (same).

## L. Gardner and Sons

An unchanged final payment of 7½ per cent is being distributed by L. Gardner and Sons, Limited. The ordinary dividend is 13½ per cent, tax free. Group net profits, after tax, for 1957 were £311,550 (£392,958).

## Cleveland Petroleum

The Cleveland Petroleum Co., Limited (an Esso subsidiary) earned a net trading profit of £53,997 (£63,931) for 1957. "Abnormal economies" from restricted operations during the Suez period were responsible, with other non-recurring factors. Dividend 15 per cent (same).

## British Vacuum Cleaner and Engineering

The British Vacuum Cleaner and Engineering Co., Limited, recommends a dividend of 10 per cent on the ordinary in respect of the year ended September 30, 1957. Group profit before taxation was £34,345 (£23,834), group net profit £8,446 (£1,247). After debiting £35,000 (£65,000) from development expenditure.

## Beyer, Peacock-Hawker Siddeley

Beyer, Peacock and Co., Limited, has linked up with the Hawker Siddeley Group to make diesel hydraulic and diesel-mechanical locomotives. Beyer, Peacock will make the locomotives and the Brush Group, a member of Hawker Siddeley, will supply the diesel engines. A new company, Beyer, Peacock (Hymek), Limited, has been formed to handle the selling side of the new venture. Beyer, Peacock will hold half the equity in the new company, and Armstrong Siddeley Development, a member of the Hawker Group, the other half.

## F. Perkins

In 1957 turnover of F. Perkins, Limited, fell by £7,000,000 to about £14,000,000, and the group returned a net loss of £318,751 (profit £348,075). Mr. F. A. Perkins, chairman and managing director, states that the setback was only temporary and that there should be a reasonable turnover and profit for 1958. The company's pioneering of diesel engines had been so successful that large vehicle manufacturers commenced to produce their own engines; this was a factor which had occupied our minds for some time; the Suez crisis substantially reduced a major portion of overseas and United Kingdom markets, and the company's most important Eastern market was closed because of internal financial restrictions.

## SHIPPING and SHIPBUILDING

## Hull Seeks to Recover Position

**I**F Hull was to regain the position of third U.K. port which it lost to Liverpool in 1956 it was vital that more money should be sunk into its development. Councillor J. M. Stamper told Hull City Council last week. "The whole of the city's life and industrial wealth is concerned with the port," he went on. "We cannot afford to let Hull slip down any further. We have had the wonderful prestige value of being the third port for many years." It was agreed to call a meeting of representatives of the Parliamentary and General Purposes, Development, Town Planning and Works Committees, together with representatives of outside bodies.

## Mr. Onassis Unrepentant

**I**NTERVIEWED on B.B.C. television on Monday evening this week, Mr. Aristotle Onassis, the Greek shipowner who keeps his yacht at Monte Carlo, declared that if Britain wanted to trade against international competition she would have to adopt new tactics. "If there are flags of convenience existing you will have to make yours more convenient. People think the great advantage of the Panamanian flag is taxation. Over and above taxation the great advantage is the lack of restrictions. If you have a vessel and somebody wants to charter it, he wants to make his decision in a matter of hours, sometimes in a matter of minutes. If you tell him 'I have got to ask my government to give me clearance on A, B and C' he knows it takes days and weeks and he does not like to wait. He can't afford to wait." The only way to compete, and the most constructive way, was "to make the inconvenient convenient."

## Irish Shipping Rates

**P**RESENTING evidence in Dublin before the tribunal inquiring into the level and structure of cross-Channel freight rates, Mr. J. W. Read, for the B.T.C., said that there were frequent light sailings from Holyhead to Dublin, most of which were unproductive, and the Commission did not raise any surcharge on the livestock rates for that at present. Last year the Commission ran 51 special livestock trips and it was probably certain that 51 of the 98 light sailings were occasioned by the livestock movement. There were occasions when after it had been proposed to move 1,200 beasts from various dealers, thus necessitating a second trip, market changes would result in only 700 beasts being moved. The second ship which they brought over from Holyhead might, as a result of this, have to return light.

Referring to container traffic, Mr. Read said that they frequently made trips from Holyhead with empty containers to the North Wall to pick up fresh meat cargoes for the return trip. They were limited in their container traffic with Dublin to building materials, household removals and meat because of labour troubles there. On the other side of the Channel they had an enormous traffic in containers. A diverted traffic in containers was handled between Fishguard and Rosslare. The Commission's view was that the rates for the carriage of livestock between Ireland and Britain were low.

## PLEDGE ON C-LICENCES

## At T.R.T.A. Dinner

**T**HE Conservatives have firmly rejected, at least for the present, any proposals put to them for restricting the issue or use of C-licences. This much may be gleaned from the remarks by Mr. G. R. H. Nugent, Joint Parliamentary Secretary, Ministry of Transport, at the annual dinner of the Traders Road Transport Association in London this week. Mr. Nugent was speaking of Socialist intimations of restrictions on medium and long-distance C-licensed operation when he said, "the Government has no more intention of accepting this than renationalisation of long-distance road haulage." They were absolutely opposed to any limitations on C-licences. The Socialist ideology was to cradle the railways by throttling road transport competition. This was the "economics of bedlam"; a far better plan was the Conservative programme for modernisation of the railways in order that they could compete more fully and successfully with other transport. That was for the overall good for the national economy.

"This wretched strike that nobody wants," said Mr. Nugent in a reference to the London bus stoppage, had come about after London Transport had done its best by offering to implement the award of the Industrial Court and the Government had given it its full support in the strike which was now in progress. From his own experience he knew how rapidly the roads programme was gathering momentum. Last year they had authorised £68 million of new works but this year it had soared to £106 million and for the first time we were enduring a "financial crisis" (Mr. Nugent doubtless emboldened by the knowledge that at least one Socialist M.P. was unavoidably absent from the gathering) without road expenditure being shed.

## Urban Problem the Most Intractable

The greatest road problem remained with them—main routes which ran through urban shopping centres. There was the inevitable clash between through traffic and the delivery van, and there had to be an endless string of compromises to suit the various interests. They had considered a ban on loading and unloading but it had been abandoned in the event—for the moment at least. He did not want it to be thought that the Government had a restrictive outlook in this matter; there was no single answer to the problem of the shopping areas. The parking meter made best use of available kerb space and gave a fair balance to the needs of all users, including commercial users.

The reference to parking meters was a retort to Lord Teynham, president of the National Road Transport Federation, who earlier had declared that the parking meter was on the way out abroad and the Paris disc system on the way in.

There was no need for an "agonising reappraisal" of the licensing system, said Mr. S. C. Bond, T.R.T.A. president. It was no part of the job of the Association to promote the development of C-licensed transport but they must look after the interests of their members when they had decided on that form of transport. Industrialists in six countries of Western Europe had recently restated their conviction that freedom of choice, including freedom to use his own transport, must be kept by trade and industry.



## British Aluminium lowers transport costs



Hampshire Car Bodies constructed this platform body and cab on an Albion FT 101 KYW chassis. Folded sheet is used for the cab framing and embossed aluminium for the panelling. The body design incorporates standard BA road transport sections, and, with a maximum legal gross weight of 14 tons, a 9½ ton payload is possible, since the unladen weight is less than 4½ tons. Moreover, aluminium construction gives low maintenance and running costs.

"Platform and Dropside Bodies" is one of a series of standard designs produced by our Development Department, which are available on request.

Standard BA road transport sections are available from stock.



The BRITISH ALUMINIUM Co Ltd

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AP 38